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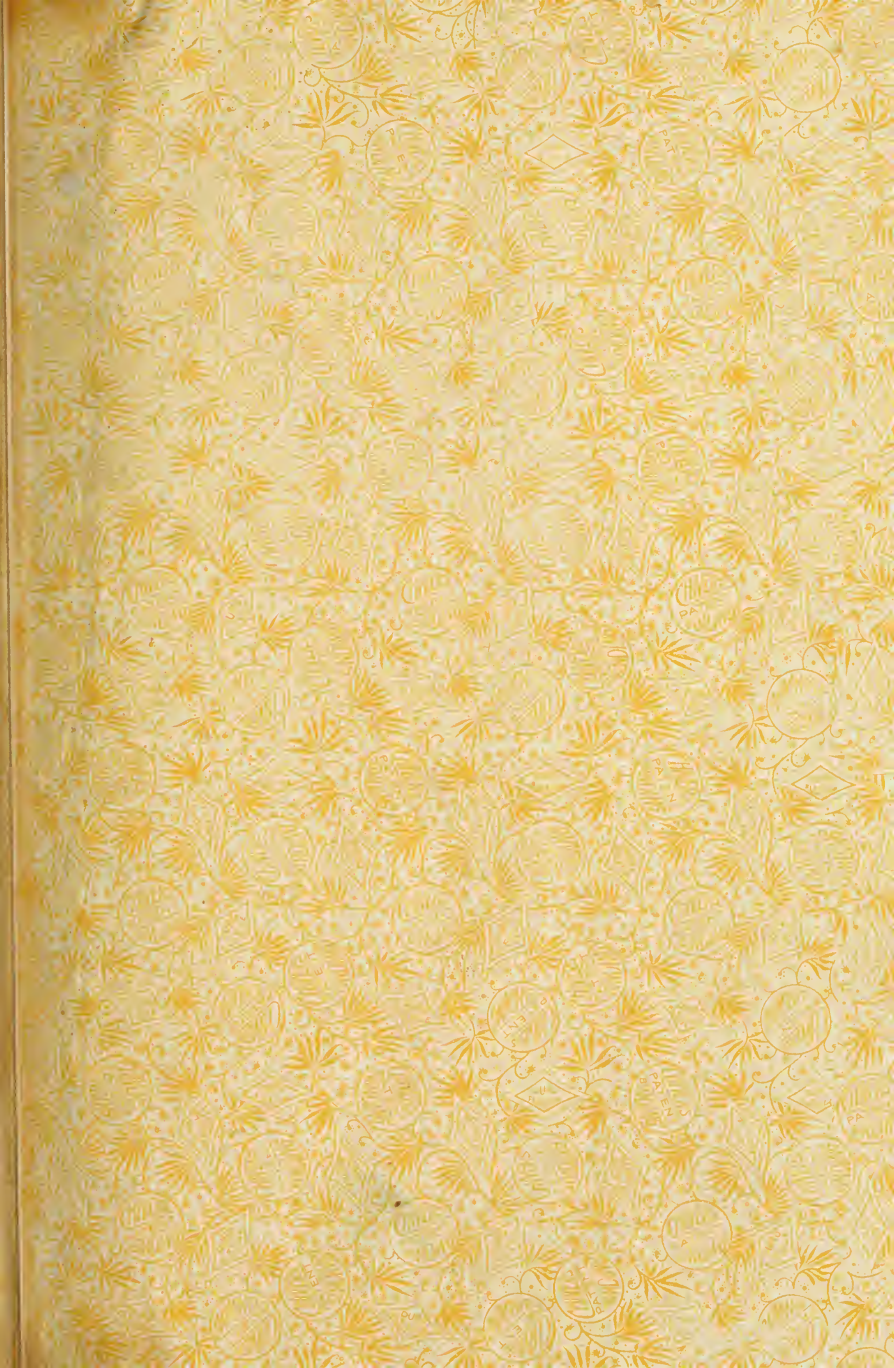
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ANNALS OF GYNECOLOGY AND PEDIATRY

A MONTHLY REVIEW OF GYNECOLOGY, OBSTETRICS,
ABDOMINAL SURGERY, AND THE DISEASES OF CHILDREN.

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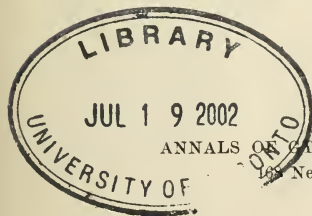
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ANNALS OF GYNECOLOGY AND PEDIATRY

VOL. XIII.

OCTOBER, 1899.

No. 1.

ORIGINAL COMMUNICATIONS

OEDEMA AND ELEPHANTIASIS OF THE EXTERNAL GENITALIA, FOLLOWING REMOVAL OF THE INGUINAL GLANDS.*

C. A. HAMANN, M. D.

My main object in preparing this paper was to report an unusual and, so far as I know, unique sequel of an operation for the radical cure of femoral hernia—namely, lymphangitis and edema of the *labium majus*.

The patient, a middle-aged lady, was kindly referred to me by Dr. W. H. Humiston, with whose assistance I operated. The hernia had been present for about a year upon the right side. No truss had been worn. On November 27, 1898, the hernia could not be reduced. On the succeeding two or three days she had a little nausea. Upon November 28 the sac was found to be about as large as a walnut, tense and painful, and gave no impulse on coughing. She was therefore advised to have the operation done at once.

Upon making a vertical incision over the hernia it was seen that the sac was covered only by integument and superficial fascia. No intestine was in the sac—only a club-shaped piece of omentum and some turbid fluid were present. The omentum

*Read before the Ohio State Medical Society. 1899.

was ligated and cut away, the stump being returned into the abdominal cavity. In freeing the sac and exposing Hey's and Poupert's ligaments, there was necessarily considerable disturbance of the abundant loose fat in that locality. This fat and perhaps three or four small saphenous lymph-glands were therefore removed. Three sutures of chromicized gut were passed through Hey's ligament and then through the fascia over the pectineus muscle, after the method of Bassini. Upon tying these the femoral canal was found to be fairly well closed. The patient's recovery was quite uneventful, the wound healing by first intention in about ten days. She was kept in bed nearly three weeks.

About three weeks after she had got up, she had an attack characterized by chilly sensations, fever (up to 102° F.), and by a painful swelling of the right *labium majus* and the area about the lower end of the inguinal canal. The wound and the tissue about it were not involved. Under the use of hot poultices the attack subsided in three or four days. She has since had seven or eight similar attacks coming on at intervals without apparent cause. For the past five weeks there have been none.

In each attack there was a brawny induration of the parts, which did not pit upon pressure, redness of the skin, with itching and pain, usually accompanied in the beginning by fever and chilly sensations. No suppuration ever occurred. The last attacks were less severe than the first. There is now but very slight enlargement of the part. The *labium minus* was not involved at any time. The inflammatory attacks bore no relation to the menstrual period. No abrasions affording access to micro-organisms were seen.

I regarded the case as one of lymphangitis, accompanied by lymphatic edema, due to the interference in the lymph-flow produced by the removal of the glands and fat, and by the cicatricial contraction.

But why should these attacks come on in this case, in which so few glands were removed, and no suppuration occurred, while complete extirpation of the inguinal glands, even upon both sides, is so seldom followed by like consequences?

The patient was of course greatly annoyed by the repeated inflammations and anxiously inquired as to the ultimate outcome. I told her that an elephantiasis of the vulva might result and that

there was no way of preventing it. Fortunately this has not yet developed. She was told to massage the parts in the intervals between attacks.

The sequel for an operation of femoral hernia was quite unknown to me, and in a quite extensive search of the literature I have failed to find similar cases. Upon inquiry among surgical colleagues I heard of no such complications. Dr. W. B. Coley of New York, and Drs. John B. Deaver, Edward Martin and G. G. Davis, of Philadelphia, write me that they have not met similar cases.

To be sure it is not a very serious occurrence, yet it is quite annoying to both patient and surgeon to have such a condition follow, particularly if *elephantiasis of the genitalia were to result*.

In operating for the radical cure of femoral hernia I do not see how one can avoid removing some of the saphenous glands, and some of the loose fatty tissue which is usually so abundant about the saphenous opening; the sac of a femoral hernia is nearly always surrounded by more or less fat, and in order to thoroughly expose Poupart's ligament and the *fascia lata*, prior to the introduction of sutures, considerable dissection must be done. If the fat and glands are left there is danger of interference with the healing of the wound and of sloughing.

The obliteration of the femoral canal that is sought to be accomplished in the Bassini method, must narrow or close the lumen of the large lymph-trunks, some six or eight in number, that pass through it—yet I have never heard of edema being produced as a result. It is remarkable that removal of lymph-glands by operation, or by suppurative processes and the obliteration of large lymph-vessels, comparatively seldom gives rise to interference with the return flow. In my case the glands removed were part of the saphenous group and also perhaps the inner glands of the horizontal inguinal group. These are the ones that receive the lymphatics from the external genitals and consequently one might expect lymph stasis after their removal.

The fact that the large lymph-trunks from the lower extremity pass through the femoral canal would lead us to think that femoral hernia would be likely to cause obstruction of these channels by pressure, or that the operation for the radical cure of the hernia in which an attempt is made to close the canal, would be

liable to be followed by edema of the lower extremity; yet such a sequel is, as far as I know, never encountered.

Removal of the cervical lymph-glands is never followed by edema or elephantiasis so far as I know. Nor is the removal of the axillary glands followed by edema—and but rarely do we see disturbances after extirpation of the inguinal glands. Cohnheim states that complete removal of all the lymph glands in the posterior extremity of the dog does not result in stasis of lymph.

The explanation of these facts is to be sought partly in the frequent anastomoses of the lymphatics, an obliteration of one set of vessels being compensated for by the anastomosing channels. Furthermore, the blood-vessels can take up the lymph, provided there is no excess of transudate. That there is not infrequently a communication between lymphatics and veins has been shown by several careful observers. Petrel has seen them communicate with the portal, renal and azygos veins. Stenson describes one emptying into the superior cava; Schmiedel, one into the internal iliac vein; Vermeuil, one emptying into the axillary vein; Meckel, into the inferior cava and *vena porta* (Curnow, *Lancet*, Lond., 1879, pp. 510); Leaf (*The Surgi-Anatomy of the Lymphatic Glands*, Lond., 1898), has described direct communication of lymph-vessels with veins in the inguinal region. In some half a dozen dissections of the inguinal lymphatics I have failed to find these.

There are no intraglandular anastomoses between lymph-channels and veins as has been believed by some observers. The perivascular lymph-spaces also afford a means of escape for the lymph.

Again, as will be more fully explained later on, after removal of lymph-glands regeneration occurs in the peri-glandular fat. Thus it will be seen that there are numerous reasons why lymph stasis does not result in the majority of cases when glands are removed, though why stasis *occurs in some cases* is not clear.

At the present time removal of the inguinal glands which are enlarged and the seat of suppurative processes is frequently practiced. This procedure is, as a rule, eminently successful. The cure is much more rapid than if the abscesses are merely opened—the entire mass can be removed, the wound sutured and primary union obtained. In several cases I have obtained primary union even though pus escaped into the wound cavity. When

the individual glands are examined it will often be seen that in the centre of the gland there is an abscess; often there are several foci of suppuration. Such cases of inguinal adenitis are, as is well known, due to gonorrhœa or chaneroids; at times they are tubercular; often there is a marked peri-adenitis, and complete removal of the infected area is then hardly possible. Adhesions to the saphenous vein and to the femoral sheath render the operation difficult and dangerous, and I have known death to follow a wound of the femoral vein made during operation.

The lymphatics of one side of the body communicate with those of the opposite side, and at times a large vessel from the penis will be seen to decussate, as it were, with its fellow. In three subjects in which I recently dissected Scarpa's triangle, I found several glands fused into a large flat mass, and on the superficial aspect of this mass was a groove in which lay the long saphenous vein. In one case a large vein, the internal femoral cutaneous, passed through the glandular mass, being completely imbedded in it.

The large lymphatics which drain the lower extremity, external genitalia, buttocks, anal region, perineum and lower abdominal wall pass through the femoral canal; I have usually found from five to eight of these large lymph-vessels in the femoral canal. In two instances I have found one or two lymph-vessels passing up on the outer side of the common femoral artery, and lying upon the *fascia lata* which they pierce just below Poupart's ligament and then course along the external iliac vessels. In the illustrations and descriptions of the inguinal lymphatics I have not noticed a reference to these last-named channels.

The glands are throughout the body embedded in a considerable amount of fat; the importance of this peri-glandular fat will again be referred to.

Now, in the great majority of cases in which the inguinal glands are extirpated, even if both sides are operated upon, no lymph stasis and elephantiasis result. Occasionally, however, these unfortunate sequels occur. I have seen them in three instances. Where are the clinical phenomena which manifest themselves in these cases?

At a period varying from a few days to several weeks from the time of operation, the penis and scrotum (for it is usually the male sex in which the affection occurs) become swollen. There

is a rather firm edema of the parts, a sensation of fullness and distention is complained of by the patient, and there is at times slight redness, accompanied by itching and pain. The swelling may or may not subside. It is followed by other attacks, accompanied often by fever. These repeated inflammatory attacks, in which there is perhaps a reticular lymphangitis, are, as well known, seen in cases of elephantiasis of the extremities. They resemble erysipelas, but their relation to this disease has not been clearly determined. As in elephantiasis of the extremities each succeeding attack leaves the parts more hypertrophied. The connective-tissue increases in amount owing to the lymph stasis and thrombosis of the vessels and consequent hypernutrition of the tissues. Thus gradually a condition of elephantiasis develops.

In some cases these inflammatory attacks do not occur, but there is a gradually increasing edema and overgrowth of the subcutaneous connective-tissue. Dilated lymph-vessels (lymphangiectasis) and lymphorrhœa may be met with.

References to these cases of lymphatic obstruction after gland extirpation in the groin are rare in surgical literature. Lauenstein (*Deutsche Zeitschr. f. Chir.* Bd. 35, pp. 573) reports 183 operations but does not mention that he encountered these sequels. Riedel (*Arch. f. Klin. Chir.* Bd. 47, p. 216) records two cases, both males, and the distressing consequences of the operation caused him to abandon the procedure and to substitute for it incisions and curetting. In Esmarch and Kulenkampf's extensive work on elephantiasis are found numerous cases of elephantiasis of the lower extremities and genitalia associated with glandular inflammations, but none that were consecutive upon operations for the removal of the glands. I am confident, however, that the cases are not so rare as would seem, and an extensive inquiry among experienced surgeons would doubtless show that the complication is frequent enough *to merit consideration* when the operation is contemplated.

Bayer (*Prager Zeitschr. f. Heilkunde*, Bd. VI, pp. 105 and *Arch. f. Klin. Chir.*, Bd. 49, pp. 637) brings out some very interesting and important facts in regard to the regeneration of lymph-glands, which have a bearing upon the subject.

He points out that all lymph-glands are normally surrounded by adipose tissue which forms a covering for them; usually a more or less distinct though thin connective-tissue lamina invests

this peri-glandular fat. This perpendicular fat and areolar tissue contain an extensive system of lymph-spaces and are to be looked upon as a part of the lymphatic system. In this tissue regeneration of glands and vessels occurs. Bayer showed this both experimentally as well as by the examination of cases in which there had been a new formation of glands, as in secondary carcinoma. I shall not describe in detail the histologic proofs of these statements, but shall give the conclusions at which Bayer arrives:

(1) "After extirpation of lymph-glands there occurs a regeneration of the same under certain circumstances.

(2) If regeneration does not occur it is likely that the lymph-flow is reëstablished through collateral channels.

(3) The formation of new glands occurs within a relatively short time (three to six weeks).

(4) Regeneration is influenced by the mode of healing the wound.

(5) The newly-formed glands develop in the fatty tissue. If now at the time of the operation this fatty tissue is removed, or if extensive suppuration leads to its destruction, or if repeated erysipelatous attacks, which lead to an obliteration of lymph-spaces, occur, this regeneration is materially interfered with, and the consequences above described may result. On the contrary, if the fat is allowed to remain and if primary union is secured, the circumstances are favorable for regeneration."

Hence Bayer advises that the fatty tissue, or part of it, be, if possible, allowed to remain, and that every effort should be made to *secure primary union* of the wound.

The valuable observations of Professor Bayer are therefore worthy of being borne in mind by the surgeon, though in many cases it will be impossible to leave the fat and to secure primary union. Prolonged suppuration must necessarily occur at times.

We cannot tell in any given case whether lymph stasis and elephantiasis are going to occur or not. In some cases the conditions for its development are most favorable—yet no trouble results. In others there may be edema when we least expect it.

The treatment of the condition, when once developed, is very unsatisfactory. There is nothing that can be done to reëstablish the lymph-channels. Excision of parts of the hypertrophied skin and fascia affords about the only relief that we have to offer.

Cleveland, Ohio.

PUERPERAL ECLAMPSIA—A STUDY OF SEVENTEEN CASES IN COUNTRY PRACTICE.

J. F. FORD, M.D.

A CASE of severe eclampsia, with its unsettled etiology and indefinite therapeutics; surrounded by terrified, anxious and too often ignorant relatives; miles away from skilled medical or surgical assistance, with trained nurses an unknown or unattainable quantity, presents to the country practitioner a problem whose solution calls for all his coolness of nerve, tact, judgment, and professional skill. A country doctor myself, I can discuss the subject only from that standpoint. Seventeen cases of eclampsia—twelve in my own and five in consultation practice—have come under my observation during a period of twelve years, including in round numbers 500 obstetrical cases. Two of these cases present points of sufficient interest to justify a report in this paper.

CASE I.—Mrs. J. C., aged 20, primipara, in the eighth month of pregnancy. On the evening of March 26, 1896, she was suddenly seized with severe headache, followed almost immediately by violent convulsions. Thirty minutes later, the convulsions following in rapid succession, she was given $\frac{1}{4}$ grain of sulphate of morphia, 1-150 grain of sulphate of atropia, with 15 minims of Norwood's tincture of veratrum viride. This dose was repeated in thirty minutes. Patient comatose, but not at all edemic. Pulse now about 60, but the convulsions, although decreased in severity and frequency, still continued. One hour later she was given per rectum, chloral, 40 grains, kali bromide, 60 grains, and tincture of veratrum viride, 30 minims. From this date until the 30th the patient was watched closely and the treatment continued to the limit of safety, with the result that the coma disappeared leaving a condition of hebetude, varied by intervals of active delirium. The convulsions varied in number from two to six in twenty-four hours. Free diaphoresis with the hot, wet pack, was induced on the 29th, but gave no benefit. Saline and hydrogogue cathartics were tried, but heroic doses failed to produce more than an occasional evacuation. Urine was highly al-

buminous, varying in quantity from four to eight ounces, and specific gravity from 1,005 to 1,010 daily. From the inception of the attack to March 30th, the patient had eighteen convulsions. On this date she developed left mydriasis, ptosis, and amaurosis with a partial right hemiplegia. Delirium constant and more active.

On the 31st, under chloroform anesthesia, the patient was artificially delivered of a living child; time of operation forty minutes, the os being easily dilatable. The only good result obtained was a disappearance of the hemiplegia and convulsions. The condition of the bowels, kidneys, and nervous system remained the same. On April 20th, the convulsions and hemiplegia and active delirium returned; the urine decreased to less than four ounces daily; specific gravity 1,008, by volume 50 per cent albumin. The muscles of deglutition being involved in the paralytic condition sufficient to almost prevent nourishment or medicine being given by the mouth, colonic flushings of normal salt solution containing full doses of magnesium sulphate were resorted to, and at intervals rectal alimentation of peptonized milk was tried, but all without changing the aspects of the case in the least. A consultation was had April 22d with Dr. C. W. Oviatt. A careful examination and review of the history and treatment of the case resulted in my decision (with his consent) to try hypodermic injections of chloride of gold and sodium. A dose of 1-10 grain of the combined salts was given morning and evening, which with saline cathartics and a milk diet was now the exclusive treatment. The first twenty-four hours showed a decided and most surprising improvement. The urine increased to sixteen ounces, with a specific gravity of 1,012. The bowels gave several copious fluid evacuations, and from this date the patient made a rapid and uninterrupted recovery.

CASE II.—Also a primipara, aged 19, was delivered of a healthy child a few minutes before my arrival. The placenta was removed with ease and the patient's toilet made as usual. In a few minutes she complained of a severe pain in the back, which soon extended to the head, and within less than an hour after delivery she was in the midst of violent convulsions. These followed each other in rapid succession until at the end of the fourth she became profoundly comatose and the convulsions ceased after a second hypodermic injection of morphia, $\frac{1}{4}$ grain,

and atropia, 1-50 grain. Two hours later she received hypodermically, 1-10 grain of combined salts of chloride of gold and sodium; also, subcutaneously, one quart of a sterilized saline solution containing chloride of sodium, 160 grains; chloride of potassium, 6 grains; carbonate of sodium, and sulphate of sodium, each 5 grains; phosphate of sodium, 4 grains, and sulphate of magnesium, 60 grains. The bladder was emptied by catheter of about six ounces of coffee-colored urine, with a specific gravity of 1.010 and by volume 25 per cent albumin. The patient was next enveloped from the toes to the chin in blankets wrung from hot water and reinforced by hot water bottles, the head protected by cloths from ice-water, renewed every ten minutes. Five hours later the patient awoke, the hot pack was replaced by dry warm clothing, the cold applications to the head being continued a few hours longer. The bowels acted several times very freely during the next few hours, and the patient voided naturally fully a quart of urine. The subsequent treatment was saline cathartics, 1-20 grain chloride of gold and sodium by the mouth three times a day, and a milk diet.

Ten of these seventeen patients were primiparae. Nine cases occurred before fetal viability, while two were post-partum. Three cases gave no history of prodromata, and two were non-albuminuric, while three showed no edema. In four cases only was an opportunity given for prophylaxis, and then invariably successful. Venesection was attended with favorable results in three cases exhibiting edema pulmonalis. Hypodermoclysis, according to formula already given, was resorted to in four cases with apparent benefit. Five fatal cases occurred, two being my own and three consultation cases. One being a case of complicated chronic renal disease, two dying before any treatment was instituted, and two where active interference was denied and the waiting plan with medical treatment alone was permitted. Five cases occurred in the village of Omro, the remaining twelve being confined to a limited area north and west not exceeding a radial distance of seven miles. The soil in this region is chiefly of a clay and lime-stone formation, the water excessively hard, and the inhabitants showing a tendency to lithemia; while in all other directions the soil is gravelly or sandy and the water in many places quite soft.

Raikes, in the *Canadian Practitioner*, calls attention to similar

conditions existing in Belgium, Sweden, and in states bordering on the Ohio river.

Rational therapeutics must always depend on definite and conclusive etiology; but here, in the absence of such a basis, "the view that eclampsia is the result of a complex irritant poison, which is produced not only by failure of excretion by the kidneys, but also by failure in the action of the liver, the skin, the lungs, and the intestines," affords us at least a rational working theory and is the position taken by most of the leading authorities today, and is perfectly consistent, whether there be renal disease or not; whether there be edema or not; whether the case be albuminuric or non-albuminuric; whether the attack occurs in early or late pregnancy, or is post-partum. The position is still further strengthened by the fact, as shown by Dr. Edward P. Davis of Philadelphia, that the lesions, as found post-mortem of a case of eclampsia, are practically those of an irritant poison, as manifested by an "intense pulmonary congestion, dry, serous membranes, enlarged, mottled and softened liver, injected and granular kidneys, distended right heart, the hemorrhagic extravasations in stomach, and the areas of infarction and friable condition of blood-vessels of the placenta."

Many cases of eclampsia present very impressive, if not convincing, pictures of the results of an irritant poison—a toxemia. Massein, of St. Petersburg, has found that the bodies of pregnant women at the end of pregnancy contain large quantities of toxic substances in the form of "partially oxidized products or leucomains, which are usually excreted by the kidneys or liver."

Ludwig and Savor, by a series of experimental studies as to the toxicity of eclamptic urine, have arrived at conclusions pointing to retained toxins as the cause of eclampsia.

The clinical picture of a severe case of so-called bilious or sick headache (a lithemic storm), with the attendant faulty elimination and the resulting vertigo, cephalalgia, neuralgia, nausea and vomiting; scanty, high-colored urine; disturbances of vision, and oftentimes melancholia or slight delirium, so very closely parallel the prodromal phenomena of many cases of eclampsia, as to fully explain why occasionally some unfortunate physician fails to recognize the patient's danger and treats her for "biliousness" until an explosion of fatal convulsions causes him to lament his lack

of care and supervision of his patient. But the etiological relationship between these conditions may be traced still further.

Defective maternal and fetal metabolism is assigned as the origin of those poisons which produce puerperal and infantile eclampsia. During pregnancy there is a decrease of red and an increase of white blood-cells, with an attendant condition of hydremia; metabolic activity is greatly increased in maternal tissues, which added to fetal metabolism, results in an unusual amount of excrementitious materials, much of which has been only partially oxidized (catabolism). The body thus, even in a healthy organism, becomes overloaded, the normal balance between excretion and secretion lessened, and very liable on any slight provocation to become so disturbed as to permit of an explosive toxemia. These partly oxidized materials constitute the principal source of lithic acid. Very often the urine of a newly-born infant contains an excess of this acid, indicating an abundance of this product within the fetal tissues. The urine of eclamptic women is almost invariably hyperacid, showing (microscopically) an abundance of crystals of lithic acid. Both urea and lithic acid and its compounds are non-toxic; but closely associated with the latter, and always found in the urine of patients suffering from lithemic paroxysms, Dr. B. K. Rachford, of Cincinnati, has found two toxic leucomains, paraxanthin and heteroxanthin, which on being injected into mice and guinea-pigs produce a group of symptoms which give an exceedingly accurate picture of a case of eclampsia, as follows: (1) Increased reflex excitability, gradually increasing to convulsive movements. (2) Dyspnea continuing to death. (3) Contraction of pupils and nystagmus. (4) Spasm of diaphragm and asphyxia. (5) Spasm of jaws and frothing at mouth. (6) Convulsions, first tonic, then clonic, sometimes ending in death. (7) Prolonged narcosis if less than a lethal dose is given.

These substances, as well as all other alloxuric bodies, are eliminated by the skin, kidneys and intestinal tract. No other poisons have been found in lithemic urine capable of producing the phenomena of lithemia, and from these and other conclusions Dr. Rachford believes that these two leucomains are the main causative factors of this condition; but, when in addition to the above conclusions, we remember the well-known facts, (1) that these maternal excretory organs are called upon to do extra duty under

the unfavorable anatomical conditions incident to pregnancy; (2) that the same condition induces an excessive nervous irritability, and then add to these the fact that these leucemias are an active, irritant poison, showing their effect on all these organs, producing clinically the phenomena of eclampsia, it is rational to conclude: (1) that paraxanthin and heteroxanthin are common etiological factors in lithemia and eclampsia; (2) that lithemia in the male and non-pregnant female organism is analogous to eclampsia in the pregnant state; (3) or that eclampsia is simply a type of that multiform condition called lithemia; (4) that it is a preventable condition, and (5) that elimination is the alpha and omega of its therapeutic indications.

This applies to all cases, whether the object be prophylactic or curative. For prophylaxis, a milk, or at least, non-nitrogenous diet, with any of the numerous combinations, cholagogues in tablets or pills at bedtime, with some saline in the morning, with the chloride of gold and sodium after each meal, will probably answer every purpose. But for the eclamptic stage, of course, more speedy elimination is demanded, and in addition to this (1) the effects of toxins (convulsions) must be controlled, and (2) the most fruitful source of their production (fetal catabolism) must be cut off as soon as possible. For the control of convulsions we have a large number of drugs from which to choose, but many, if not all, are open to serious objections. Morphia is charged with the danger of deepening the eclamptic coma, and its unquestioned tendency to decrease functional activity of the excretory and secretory organs. Veratrum viride, so strongly advocated by many able teachers and practitioners, cannot be continued at length without dangerous depression, and often fails to control the convulsions even when the pulse-rate has been reduced to the specified sixty per minute; while, as a diuretic and diaphoretic, it has too often proved a disappointment. Pilocarpin is condemned as being positively dangerous in this stage from its well-known liability to produce pulmonary edema, while chloroform is not without its critics in this respect. Chloral cannot be continued long, nor is it free from depressing effects. These are among the most commonly used drugs for the control of convulsions, of which morphia or chloroform used tentatively is probably the most useful and the safest. But none of these possess any merit as eliminants, while the effort at elimination by means of the ordinary hydragogue cathartics, and the stimulant or refrigerant

diuretics, is too often a futile one, owing to the lack of time or the coma of the patient, which prevents their use entirely. We have, however, in the use subcutaneously of sterilized saline solutions, reinforced by suitable quantities of magnesium sulphate, a therapeutic agent of probably the greatest value of any at the present time. Although its use is objected to by some authorities, where doubt exists as to the integrity of renal structures, its adaptability to such a wide variety of cases, its speedy and prompt results, both as a cathartic and diuretic, together with the ease and safety of its use, more than counterbalance the objection. The use of chloride of gold and sodium is not open to even this objection, and has long been known for its beneficial effects as a tonic, eliminant, and diuretic, and a standard remedy in chronic renal disease.

The widest difference of opinion exists as to the question of emptying the uterus. But while each case must be treated on its own merits, Charpentier of France, after an exhaustive study of more than five hundred cases, comes to the following conclusions:

1. That labor should be waited for and terminated naturally whenever possible.
2. That induced labor should be resorted to only in exceptional cases in which medical treatment has failed.
3. And this even is to be delayed until the cervix is dilated or dilatable, and that Cesarean section, manual dilatation of the cervix, especially deep incisions, are absolutely unjustifiable.

These teachings are endorsed by Winckel, but the majority of the leading teachers and practitioners, among them Edgar and Grandin, of New York, and Davis of Philadelphia, favor more prompt measures when intelligently used; but surgical should be secondary to medical treatment.

Morphia combined with *Tr. veratrum viride* (Norwood), aided by chloral and sodium bromid per rectum, followed by hypodermoclysis, and in strong and vigorous patients, or in suspected chronic renal lesions, venesection, should be tried first. Even when failing to control the case, they still, by rendering cervical tissue more easily dilatable and obtunding peripheral nervous excitability, diminish the danger and shorten the time of mechanical dilatation and delivery, and here every effort should be put forth in order to secure absolute asepsis of patient, instruments, hands of operator and assistants. In no class of cases is this more important.

Omro, Wis.

AMERICAN ASSOCIATION OF GYNECOLOGISTS AND OBSTETRICIANS.

Indianapolis, September 19-22, 1899.

PRESIDENT'S ADDRESS.

EDWARD J. ILL, M.D.

(Abstract.)

An abuse, fostered by the security that aseptic surgery gives us, has gradually crept into the work of many all over the civilized world.

The rights of the unborn are often not respected as they should be, and as a strict regard for truth, conscientiousness and careful professional thought on our part would indicate. The rights of the unborn would be more respected if it could secure for itself competent legal authority to represent it before a court of law. He holds that the induction of abortion is performed too frequently; that the law and custom of consultation leaves a wide field for opinion, judgment and professional courtesy. Too frequently the practitioner's sympathy runs away with his reason. The frequent deaths of the unborn, as caused by the regular profession legitimately, must ever remain a sign of weakness and impotence of an otherwise noble and humane profession.

The indication for such an operation must greatly change with the advances of therapeutics. Before long we shall be told that the life of the fœtus must not be taxed less than that of the mother. When that becomes an axiom our resources will increase to an astonishing extent.

Changes in that direction have been very apparent during the past few years.

Cesarean section is now commonly performed with the greatest likelihood of saving mother and child, and with much less risk to the mother than was formerly incurred by induced abortion.

He discusses pregnancy complicated with myomata, carcinoma of the cervix, hyperemesis, etc.

No alternative as yet has been found for the non-replaceable

complete prolapse of the pregnant uterus, and retroflexed incarcerated uterus, when even a celiotomy will not help us.

When we find ourself confronted with cases that need artificial termination of a pregnancy, let the indication be drawn so close that the most sensitive conscience will not find fault.

Though we have no right to chastise our patients for their morality, it behooves us to tell them where physical misery depends upon moral decrepitude and to decline our assistance in their illnesses unless proper regard be given to our admonitions.

This is especially the case where we are asked to treat women sick as a result of the prevention of conception.

The symptoms produced are, mainly, local and nervous, the former preceding the latter.

Among the local symptoms we find increased mucous discharges, frequent micturition, bearing down pubic pain, pain in both iliacs and the small of the back. Standing and walking becomes painful; thus owing to lack of exercise there results a condition of slowness in the action of the bowel, a disturbed digestive and heart action. With failure of the general health the nervous system fails. These patients tell us of several attacks of nervous prostration.

A physical exploration shows increased vaginal discharges; the vagina appears red and sensitive, its mucous lining thickened. The cervix and corpus are enlarged. The cervix looks blue with turgescence of its veins, and an abundant quantity of blood is poured from them as soon as punctured. The quantity of glairy mucous which pours from the cervix is greatly increased over normal. Frequently the uterus is retroflexed, rarely retroverted, and the utero-sacral ligaments so sensitive that they can barely be touched. With these symptoms we nearly always find enlarged, prolapsed, and sensitive ovaries.

Among the early symptoms will be increased menstrual flow and with it often an easing up of the congestive symptoms. Later this becomes less than normal and makes the prognosis an exceedingly bad one. One can safely say that, when this stage is reached, the patient has become an invalid and permanently sterile. In these aggravated cases menstrual pain begins several days before the flow and is marked by radiations from the iliac fossas down the anterior and inner aspect of the thighs. Now, we find them complaining of a peculiar pain midway between two

periods. In these bad cases intercourse has become painful and often disgusting. It has been the writer's experience to see a number of cases of myomata in women of thirty years or less who confessed to have followed such practices.

Nervous symptoms manifest themselves variously from occipital and vertex headaches and minor hysterical manifestations, to the graver forms of hysteria and semi-melancholia.

Newark, N. J.

THE GONORRHOEAL PUERPERIUM.

CHARLES GREENE CUMSTON, M.D.

(Original Abstract.)

FROM a careful perusal of a large amount of literature published on the subject in French, German and English, one thing stands out plainly and that is that no definite symptomatology or manifestations of a gonorrhœal process during the puerperium can be described. Gonorrhœa does not appear to produce an elevation of the temperature if the process does not extend above the internal os, and Schauta even goes so far as to assert that a gonorrhœal catarrh of the cervix may extend to the endometrium without giving rise to any serious symptoms, and Fritsch's paper certainly points to the correctness of this assertion. In some of the cases recorded in this memoir, an endometritis went through its evolution without any elevation of the temperature and an extension of the process from the uterine mucosa to the peritoneum took place insensibly. If a rise in temperature should occur in a case of a pure gonorrhœal endometritis, Leopold upholds that it may take place as early as the third day of the puerperium, and therefore, we can no longer maintain that rise of temperature, occurring late in the puerperium, is a special characteristic of gonorrhœal infection. The acuteness of the progress of the affection in the early puerperium, that is to say, the duration of fever during a gonorrhœal endometritis with or without extension of the process to the tubes or the peritoneum, will in all probability depend upon the virulence of the gonococcus whether there be a mixed infection or not.

If a newly married woman, infected with an acute gonorrhœa

from her husband, can show a bilateral pyosalpinx at the end of a week, and such cases are of daily occurrence, there is no doubt that a similar process can develop with the same rapidity during the puerperium. Gonorrhœal process occurring late in the puerperium may also be traced to various causes which certainly have a preponderent influence upon the degree and duration of the process. Veit and Winter ascribe the upward extension of the infection to the uterus, tubes and peritonem, to the relaxation of the genital organs, or to the return of the menstrual process. Wertheim has expressed a view to the effect that in married people a certain adaption to the gonococcus takes place, but when sexual intercourse is interrupted the immunity to the organism ceases, and the effect of coitus when resumed is a fresh infection.

As far as we can ascertain all authorities agree that gonorrhœal infection during the puerperium runs a milder course than other septic processes arising during the lying-in period. The milder course of the symptoms and their rapid subsidence in puerperal gonorrhœa, by no means indicates that the process has been cured, and it is a well-established fact that the gonorrhœal puerperium is extremely chronic and defies treatment, just as is the case with gonorrhœal processes in the female in general. This is especially true of recurrent perimetritis, as described by Noeggerath. When the process has involved the adnexa, the patient is subject to most severe suffering and a cure can only be brought about by the removal of the appendages, and in those cases in which the affection is allowed to go on unaided by surgical interference the patient usually succumbs to a gonorrhœal cachexia.

The presence of the gonococcus can usually be demonstrated by an examination of the lochia. The organism produces such varied manifestations in all periods of the puerperium that purely clinical symptoms are not sufficient upon which to base a diagnosis, and it is of absolute necessity to examine the secretions bacteriologically in all cases where gonorrhœa is suspected. The tendency of a gonorrhœal process to extend upwards during the puerperium, and also its persistency to take a chronic course, demonstrates that this disease has a decided influence on fecundation as well as on pregnancy. Acute gonorrhœa in the female is, in most cases, largely limited to the cervix and urethra, and it would seem probable that an acute gonorrhœal inflammation of the cervical canal would prevent the male

elements from reaching the ovum, either within the uterus or in the tube.

On the other hand, a chronic gonorrhœal process of the cervix should not interfere with the entrance of the spermatozoa within the uterine cavity, because the cervical secretions are very scant. If the entire extent of cylinder epithelium of the endometrium be invaded extensively by the gonococcus, the possibility of an impregnated ovum becoming attached to the uterine mucosa is very improbable. When the endometritis has assumed a chronic form, in which case the cylinder epithelium of the endometrium has become regenerated, so that only in a few spots pavement epithelium invaded by the gonococcus has remained, pregnancy can take place and go to term, or at least, to the seventh or eighth month. If, on the other hand, a gonorrhœal endometritis be followed by a metritis, with hypertrophy of the connective tissue and an abnormal development of the uterine glands at the expense of the muscular structure of the uterus, the insufficient elasticity of the uterus will mechanically act against the development of the organ when pregnancy takes place, and the result will naturally be an early miscarriage. This applies to the process whether it originates in the parenchyma of the uterus itself, or whether it is due to the gonococcus present in the submucosa. The most common condition met with is probably that conception and gonorrhœal infection are simultaneous, or take place shortly after one another, so that the development of the ovum will prevent the upward extension of the gonococcus, and it is only after labor has taken place that the uterine cavity becomes infected.

A pyosalpinx, if present in only one tube, will not interfere with pregnancy, because ovulation will take place on the opposite side and the ovum can reach the uterus through the healthy tube, and this condition is certainly frequently met with in practice. Bilateral pyosalpinx will render the female sterile, but even in cases where both tubes are patent a perimetritis with adhesions will prevent the entrance of the spermatozoa into the uterine cavity, because the uterus is bound down and its position changed in the vast majority of cases. In our opinion, and the same has been upheld by Bumm, the chronic gonorrhœal endometritis and salpingitis is an important etiological factor of tubal pregnancy.

The social danger of gonorrhœa is its tendency to cause sterility, and Saenger has very ably demonstrated the frequency

of what he terms a "one child sterility," as a consequence of gonorrhœal infection. The first pregnancy goes to term, and during or after the puerperium the process extends upward, producing chronic pathologic changes from the internal os upwards and the female thereby loses her aptness of conceiving and carrying her pregnancy to term.

On the other hand, every sterile union must not be attributed to the wife, and out of 205 sterile marriages Fuerbringer found that 35 per cent were due to a former gonorrhœa in the husband. According to the statistics made in France by Chervin, out of every 100 marriages 20 were absolutely sterile and 24 gave birth to only one child. Gluender, basing his researches on the history and partly on clinical examinations, comes to the result that in 84 sterile marriages 62 times gonorrhœal infection was present, or in other words, 77.5 per cent. If, on the average, 12 per cent of all marriages are sterile, 8 per cent of them must be ascribed to gonorrhœa, and it seems thus proven that gonorrhœa may not only interrupt pregnancy after it has taken place, but may prevent it from occurring altogether.

It is very true that a large per cent of females recover from gonorrhœal infection without the slightest trace of the disease remaining; become pregnant and go to term; give life to children, who, soon after birth, develop gonorrhœal ophthalmia; go through their puerperium and lactation without any trouble, while others, from the very receipt of the infection, remain sufferers for the rest of their lives, being attacked by recurrent attacks of pelviperitonitis, have abnormal labors, and often die in consequence of their diseased genital organs.

At the present time an explanation for the above statement cannot be made with certainty, but it would appear to the writer that some inherent weakness of the epithelium, as has been pointed out by Bunni, may account for those cases where the process remains. An infantile development of the female and her genital organs should also be considered as an excellent soil for the development of the gonococcus, as has been pointed out by Freund, and reddish blonde and light blonde females are certainly more severely affected by gonorrhœal infection than are darker complexioned subjects, and here the diathesis of the individual certainly acts as a *locus minoris resistentiae*.

We will here append five cases of gonorrhœal puerperium

which we have seen, and although this number could probably be greatly increased, we only report these particular cases because in each instance they were demonstrated bacteriologically to be examples of the disease.

CASE I.—Mrs. A. B., aged 24 years, was confined to her first child on April 21st, 1895. The labor was comparatively easy and the child was an eight pound girl. The antecedents of the patient were briefly, as follows: She had always menstruated regularly without pain, the flow lasting usually five days. She was married at the age of 21. Three months after marriage the patient noticed a slight glairy discharge from the vagina which never amounted to much of anything, excepting that it was somewhat increased during the three or four days preceding and following the menstrual epoch.

Five days after confinement the thermometer suddenly rose to 39° C.; pulse, 98; there were no chills. The patient also complained of considerable pain in the sacral region and also in the left side. The lochia, which had been normal in amount up to this time, decreased somewhat.

Bimanual examination revealed a small left-sided laceration of the cervix; the uterus was the size of a foetal head, soft and tender on pressure. On the left side could be felt a mass the size of a lemon, which was extremely painful and hard. Nothing could be detected in Douglas's pouch which was perfectly free. The right adnexa were apparently normal. By the speculum a few erosions were detected on the cervix, which bled rather easily when their surface was wiped over with cotton. There were no apparent lesions of the external genitals, and the urethra seemed to be perfectly normal. An analysis of the urine was also negative. A long platinum loop was introduced into the uterine cavity and some of the secretion was removed for bacteriological examination; cover glass preparations, stained with methylene violet, revealed large numbers of gonococci both between and inside of the epithelial cells.

A diagnosis of puerperal gonorrhoeal endometritis and salpingitis was made. The treatment consisted of intrauterine irrigations twice daily of a 1-3000th solution of permanganate of potassium and application of equal parts of mercurial and belladonna ointment to the abdomen.

The temperature fell to normal just one week after com-

mencing this treatment, which was carried out for about four weeks, at the end of which time a binannual examination showed that perfect involution of the uterus had taken place and that the salpingitis had almost entirely disappeared. Microscopical examination of the secretion from the cervix, taken three weeks after all treatment had been stopped, was entirely negative.

The child never presented any signs of inflammation of the eyes. The husband admitted that he had been a sufferer from gleet for the past nine years; his last attack of gonorrhœa having taken place nearly seven years before marriage.

CASE II.—MRS. A. C., aged 31 years, seen in consultation with Dr. S. H. Littlefield. The patient had given birth to two healthy children, who were both alive and in excellent health. Seventeen days after the delivery of her third child, the labor being in every way normal, the patient complained of chills in the afternoon, and in the evening the temperature was found to be 38.7° C.; pulse, 102; and we were asked to see the patient. She was a well-developed brunette with a negative history. Examination of the thorax was negative. A few enlarged inguinal glands could be detected on the right side. External genitals, urethra and Bartholini's glands were normal. Binannual examination revealed her uterus about the size of a second month's pregnancy, which was soft and rather tender on pressure. There were a few erosions on the cervix and very little mucopurulent discharge came from the os. A platinum needle was introduced into the cervical canal and some of the secretion was removed for examination; a cover glass preparation stained with methylene blue revealed numerous leucocytes containing gonococci, with clusters of the organism between them and a few epithelial cells were found. The adnexa appeared normal and were not tender on pressure.

A diagnosis of gonorrhœal endometritis in puerperio was made. After complete dilation of the cervix the uterine cavity was very carefully curetted and then swabbed out with pure carbolic acid. The fever immediately fell and in three weeks from the time of operation the patient was up and attending to her household duties. The child never gave evidence of any complication in the eyes. The husband had contracted an acute gonorrhœa about a fortnight before the birth of the child; coitus had taken place about ten days after the confinement.

CASE III.—MRS. A. D., aged 35 years, was confined of her

fourth child by Dr. Rideout of Somerville, who kindly asked me to see the case in consultation. The genital history of this patient was absolutely negative and the previous confinements had all been normal. Five days following the confinement the patient had some slight chills and pains in the calf of the right leg. The limb began rapidly to swell and within 24 hours presented all the ordinary signs of a phlegmasia and alba dolens. Two days after this the right leg became painful and rapidly developed into the same condition as its fellow. The patient complained of a great deal of tenderness throughout the lower abdomen. We saw the patient on the eighth day after the confinement and on account of the condition of the lower limbs a vaginal examination was difficult to obtain. Palpation of the abdomen revealed a mass extending across the pelvis into both iliac fossae and upwards to about 15 centimetres above the pubis.

The Doctor informed us that the child's eyes were very much inflamed on the second day, but by a rigid treatment of nitrate of silver they were improving. The usual treatment of phlegmasia alba dolens was ordered.

Three days later we were asked to see the patient again and found that the abdominal pain was becoming more severe and that the temperature was rapidly rising, and on this day had reached 40°C . Ether was given and the vagina was spread open by two vaginal retractors with much difficulty on account of the condition of the legs. There was considerable bulging in Douglas's pouch, and bi-manual examination revealed a large diffuse fluctuating mass behind and on the sides of the uterus. Posterior vaginal colpotomy was done which gave issue to about 500 cc. of a thick, yellow-greenish pus which microscopically revealed considerable number of gonococci both within and between the leucocytes.

To be brief, we will simply say that after five weeks the temperature slowly reached the normal, and the phlegmasia alba dolens subsided. Bimanual examination at this time showed that the uterus was somewhat enlarged and retroversion, bound down and surrounded by a dense mass of adhesion. About nine months later we were obliged to perform a total abdominal hysterectomy on account of the very severe pain and rectal symptoms presented by the patient.

At the time of writing fifteen months has elapsed since the hysterectomy and the patient is in very fair health.

CASE IV.—Mrs. A. E., aged 30 years, was seen in consultation with Dr. Ryan four weeks after having been confined of her second child. The antecedents of the patient both as to her genital organs and general health was rather obscure, although there apparently had been no symptoms of gonorrhœa. The labor had been normal.

The patient was a slightly built blonde, presenting a decidedly lymphatic diathesis. She complained of some pain in the lower abdomen and for the last two days the right knee joint had become swollen and painful, and it was for this latter condition that our opinion was asked for. Suspecting the true nature of the trouble a bimanual examination was asked for which revealed an enlarged and flabby uterus and considerable thickening in the parametrium. Much pain was produced by the examination. Some of the secretion coming from the cervix was removed and showed microscopically a few clusters of gonococci which were scattered throughout the preparation.

The right knee joint was considerably enlarged. The local temperature was elevated and extremely tender, and fluctuation could be elicited. The diagnosis of gonorrhœal endometritis and parametritis in puerperio, with metastasis into the right knee joint was made. Irrigations of 1-3000th solution of permanganate of potassium were ordered to be given twice daily and the knee was fixed on a posterior splint and a 30 per cent ichthyol ointment was ordered to be freely applied to the joint once daily. Internally fifteen drops of the oil of wintergreen were given four times a day.

The general condition improved under this treatment, and the temperature which, on the day the patient was first seen by the writer, was 39.2° C. fell at the end of a week to normal. By the use of the intrauterine irrigations the genital organs were greatly improved so that eight months after the confinement, when the patient was last seen, a general thickening of the parametrium and with a retroverted uterus was all that remained, and were it not for the rectal symptoms produced by this condition of affairs, as well as some pain at the time of menstruation, the patient was feeling fairly well. The knee joint was somewhat stiff and presented a certain amount of thickening around the joint, but fairly good movements could be obtained and the patient was able to walk without much trouble.

The patient's husband was a travelling man, and during his absence from town his wife had sexual relations with a cousin about three weeks before delivery took place.

CASE V.—Mrs. A. F., aged 27 years, was delivered of her first child on February 17th, 1897. Two weeks after her confinement the patient felt chilly and the temperature suddenly rose to 39° C. The labor had been a tedious one, but instrumental interference had not been necessary. As we only saw this patient once in consultation, we unfortunately do not know the ultimate outcome, but the following local conditions were found. The vagina was lined by a thin greenish-yellow membrane which extended up onto the posterior lip of the cervix. The urethra and Bartholini's glands were normal. There were no enlarged glands in the inguinal region. Bimanual examination revealed a somewhat enlarged and tender uterus with a mass about the size of a walnut on the right side. Examination of the secretion coming from the uterus as well as of the false membrane lining the vagina, revealed gonococci in considerable numbers. A diagnosis of gonorrhœal endometritis, right-sided salpingitis and vaginitis in puerperio, was made, and intrauterine and vaginal irrigations of permanganate of potassium were advised.

The husband admitted that he was suffering from a subacute gonorrhœa which he contracted four months before the birth of the child, and that coitus had only taken place on one occasion about six weeks before the confinement.

871 Beacon Street.

SOME OBSERVATIONS ON THE TEMPERATURE AFTER INTRA-PERITONEAL OPERATIONS

LEWIS S. MCMURTRY, M.D.,

(Original Abstract.)

FEVER is the most constant accompaniment of inflammation, and is the first effect of the inflammatory process upon the general organism to be manifested. While pathologists may differ as to the mechanism of this morbid process, all practically concur that pyrexia is due to the presence in the blood of substances capable of causing it. Such substances are afforded by various systemic diseases and infective fevers. The ptomaines evolved and absorbed in the course of gastro-intestinal disturbances are common causes

of elevated temperature. The chemical products of bacterial activity are the substances most familiar to the surgeon as causes of febrile action. Tissue necrosis, even without associated bacterial invasion, will beget fever; and fever often accompanies subcutaneous injuries, such as simple fractures, wherein infection is impossible except by bacteria circulating in the blood. Experimental study of fever by Kohler and others indicates that fibrin-ferment when set free in extravasated blood and absorbed through surrounding tissues will cause fever. Another substance found in blood-clot and breaking-down tissues, known as nuclein, will have the same effect, it is claimed. A careful study of the phenomena of shock will convince one that certain nervous influences may exert a potent influence in causing fever, quite independent of any infection.

As practical surgeons the subject under consideration is of the greatest interest in its relation to wound infection. Before the antiseptic era all operation wounds were infected, so that so-called "surgical fever" was the constant and inevitable accompaniment of all wounds. When modern methods enabled the surgeon to obtain primary union after operation without inflammation, it was naturally to be expected that no fever would accompany aseptic repair of surgical wounds. It was observed, however, that an elevation of temperature commonly follows all surgical operations of magnitude, even when a painstaking aseptic technique has been observed and primary union follows. The researches of Billroth, Volkmann and Bergmann upon this form of post-operative pyrexia are most interesting and important. Billroth attributed this rise of temperature to the absorption of tissues in and contiguous to the wound which had been devitalized and broken down by the traumatism of the operation. He termed it "traumatic fever." Bergmann ascribed the pyrexia to the absorption of fibrin-ferment, which I have already mentioned as shown by experiment to cause fever. He suggested the term "fermentation fever." Volkmann attributed the condition to the absorption of disorganized tissue in the wound, and proposed the term "aseptic fever."

These observations are of great interest to all surgeons, and deserve especial consideration from those constantly doing abdominal and pelvic surgery. The ominous significance of an elevated temperature immediately following abdominal section is

appreciated by surgeons generally. The relation of this symptom to post-operative septicemia makes its careful study and elucidation of the utmost moment.

The essential and all-important point in this inquiry is as to whether there is such a post-operative fever as to justify Volkmann's term of "aseptic fever." In well-appointed and properly conducted hospitals where primary healing is the rule, it is constantly demonstrated that immediately after abdominal section (beginning in the afternoon of the day of operation and lasting from twenty-four to seventy-two hours) there is a rise of temperature ranging from 99.5 F. to 101 F., even in cases of aseptic healing without suppuration. Clinical observation daily confirms the experimental demonstrations of Welch, that the blood is endowed with positive germicidal power capable of overcoming pyrogenic bacteria, so that wounds heal primarily and aseptically despite minor degrees of infection. The efficiency and limitation of this resisting function of the blood depend more upon the quantity of infecting material (the number of germs) than anything else. The difficulty and imperfection of skin disinfection, both as to the field of operation and the surgeon's hands, are so well known that it is apparent that a slight degree of infection obtains in all operation wounds and does not lead to suppuration nor necessarily prevent so-called aseptic primary union. Hence, primary union cannot be accepted as absolute proof of perfect freedom from germ infection. So-called aseptic fever in many instances is in reality the result of a minor degree of infection.

The magnitude and extent of this minor degree of infection must of necessity vary within wide limits. It may extend all the way from a so-called aseptic fever to the marked febrile action of undoubted infection. Premature exposure and dressing of operation wounds favor infection; and if we are to avoid such unnecessary exposure we must be able to interpret correctly the rise of temperature. On the other hand, if drainage is to be established and tension relieved on account of infection, the opening of dressings is a necessity which cannot be disregarded. In this the thermometer is our principal guide.

In determining this important point all the ordinary systemic diseases which beget fever, must be excluded. Among these I would especially mention malarial fevers and typhoid fever. Gastro-intestinal disorders with absorption of ptomaines are fre-

quent causes of fever, and this can be readily determined and corrected by a brisk purgative. The characteristic pulse will give aid in detecting a pyogenic fever; the pulse rising with the temperature.

The distinguishing peculiarity of all the absorption fevers, including so-called aseptic fever, is their manifestations immediately after operation. The profound infection which prevailed in pre-antiseptic days rarely manifested itself before the end of the second or beginning of the third day. The temperature of a stitch abscess does not appear until much later. The absorption fever which has been termed aseptic may quickly subside, or it may persist for many days and give much anxiety in a case wherein all other symptoms are favorable. As already stated, the pulse will usually afford valued assurances of safety.

All cases of immediate fever following abdominal operations, however, are not to be attributed to absorption. In a certain proportion of cases the fever is due to the reaction that follows shock. The action of prolonged anesthesia on the kidneys, heart, stomach and lungs may have much to do with this, when every precaution is taken to prevent shock by the retention of body heat. Here again the rate and quality of the pulse will aid in excluding sepsis.

Louisville, Ky.

OBSERVATIONS RESPECTING THE SYMPTOMS AND TREATMENT OF THE MENOPAUSE.

AUGUSTUS P. CLARKE, A.M., M.D.,

(Original Abstract.)

THE author in the consideration of the facts which he has observed remarks that the functional activity of woman partakes more or less of the character of that of the females of other mammalia; and that it is therefore only along such a line of research that many of the questions pertaining to the phenomena of menstruation can be solved.

Menstruation has been noticed to appear without the occurrence of ovulation. In such cases experience shows that this has been the result of morbid changes or defects of the tunica albuginea of the ovary, such as thickening or alteration of the fibrous layer below the epithelial covering. This may give rise

to an irregular flow, as is sometimes seen in the younger women who suffer from nervous disturbances.

There are numerous factors that serve to hasten or modify the state of the organism attending the approach of the menopause. The fact that it can be artificially induced by the removal of the adnexa is evidence that the seeming regular appearance of the menses is but the exercise of a transitional function that has obtained in the long physical history of the race.

The approach of the menopause is not unfrequently attended with a variety of symptoms. Besides the occurrence of flushes of heat, the digestive derangements and the nervous depression, there is sometimes developed a class of perversions that may be said to belong to the pre-menopause state. This consists of a marked exaltation of the faculties and an exuberance of the imagination. Such a phase of the nervous system may supervene before the appearance of that degree of stoutness of the individual which characterizes the commencing stage of menstrual cessation. Outbursts of insanity may be a sequel of the condition, so also may attempts to undertake unequal tasks, the contracting of uncongenial marriage, the neglect of family, the formation of the habit for the stronger stimulants, and the substitution of personal inattention for thoughtfulness, for neatness of appearance, and for the exhibition of proper domestic concern. Undoubtedly the withdrawing to a considerable extent of the blood from the sexual system causes a greater distribution of that element to the brain or to the central nervous system.

An important symptom is the recurrence of hemorrhage after the menopause has been reached. In those cases in which there has been extensive laceration of the cervix, evidence of seriously marked involvement should be carefully looked for. In a series of forty-eight cases of cancer of the cervix coming under the author's care within a recent period, forty-four occurred in women who had sustained cervical lesions: the other four cases appeared in patients who had suffered from dysmenorrhœa and from other continued uterine disorders. Epistaxis is a significant symptom. In those cases in which the deeper sinuses have been involved and in which the cessation of the menses has been rapid, cerebral lesions have sometimes been a complication.

The author mentions histories of twenty cases of diarrhœa as an affection attendant on the menopause. In some instances the

symptoms were mild, in others the morbid condition had continued for several years. Ulceration of the rectum and of the sigmoid flexure of the colon had not unfrequently been the result. Distention of the intestines, pressure upon other organs, and painful gastric disorders have often characterized the complication. In two cases cancer of the rectum followed, one at the end of the fifth, and the other during the middle of the sixth year after the occurrence of the climacteric.

Leucorrhœa and post-uterine catarrh have been among the most common classes of affections for which patients have sought relief. When such disorders have been dependent upon local lesions, early curettement, removal of the growths, and repair of tissue have often yielded speedy and permanent cure.

Uterine fungosities and polypoid development have been the result of endometritis or uterine engorgement and may be overcome by early curettement and by the application of local styptics.

Fibroid growths which appear during the earlier portions of the menstrual period are probably superinduced by a preternatural development of the stromal over that of the glandular element. After the period of the menopause has arrived such neoplasms may of course become arrested in their growth, on account of the regularly recurring vascular medium being diminished.

Early cessation of the menses may be superinduced by excessive involution of the uterus and by atrophy of the ovaries consequent on peculiar factors during parturition. The more gradually the function of menstruation terminates, the milder will be the local and general disturbance. In those cases in which there is marked impairment of the health at or during the menopause, serious pathological changes in the pelvic or abdominal organs will doubtless be found to have taken place.

The author, after discussing somewhat in detail the subject of other serious morbid features that may be presented, remarks that in some cases it is not altogether easy to determine exactly the line of demarkation that separates the borders of the physiological from the pathological processes. It may be said, however, he continued, that in those cases in which no pelvic lesion exists and no effects of traumatism of parturition remain, the menopause will entail comparatively little danger, provided

the change is not hastened by subjective influences and external factors.

Cambridge, Mass.

“TWO CASES OF DYSTOCIA DUE TO VENTROFIXATION, ONE REQUIRING CESAREAN SECTION.”

(Original Abstract.)

X. O. WERDER, M.D., reported five cases of firm ventrofixation followed by delivery at term. In two cases dystocia followed this operation done for complete prolapse of the uterus with inversion of the vagina. One case terminated spontaneously, the other required Cesarian section. The former case had been operated upon by himself, the latter by another surgeon. In both cases a series of operations was done at one sitting, including curettement, amputation of cervix, anterior colporrhaphy, ventrofixation and perineorrhaphy. In his own case very firm fixation of fundus and posterior wall of uterus to abdominal wall was made in order to be sure of relieving prolapse. In the other case infection is said to have been the cause of broad attachment and firm fixation.

He excludes from discussion other procedures intended to hold the uterus in anterior position and defines the limits of ventrofixation as follows: It is the operation of preference in cases of complete prolapse of the pelvic organs, and in cases in which a very large and heavy uterus, due to chronic metritis, is habitually retroverted or retroflexed and causes pronounced symptoms. In these cases he thinks less rigid fixation is ineffective. The fixation should be between the anterior uterine wall; not the fundus or posterior wall; and lower angle of wound.

He attributes the serious after-results to errors in technique rather than to the procedure itself.

Pittsburg, Pa.

INTESTINAL ADHESION IN SUPPURATIVE PELVIC DISEASES; THEIR SIGNIFICANCE AFTER VAGINAL HYSTERO-SALPINGO-OÖPHORECTOMY, WITH REPORT OF A CASE OF ILEUS.

F. BLUME, M. D.

(Abstract.)

The author stated that the time has passed when a surgeon can say, without jeopardizing his reputation, that he operates exclusively by the abdominal or the vaginal route. Since the introduction of vaginal hysterectomy and the revival of vaginal incision and drainage, our views regarding the treatment of suppurative pelvic diseases have undergone remarkable modifications. We have learned to appreciate the value of the differential diagnosis between the various forms and stages of the disease. We realize that there is no longer but one method of surgical treatment and that, in order to do justice to the patient, we must select that method best adapted to the case. He had seen many women, who, after abdominal section for pelvic suppuration, performed in this country and abroad, were invalids, and he has done secondary operations upon a number of them. He has not, however, been called upon to treat a woman upon whom vaginal hysterectomy was performed by another surgeon, nor has any of his patients required or sought treatment at the hands of other operators. His experience is in accordance with the observations of other writers and justifies the assertion that the results of vaginal hystero-salpingo-oöphorectomy in suppurative pelvic diseases are excellent, notwithstanding the suprapelvic complications, and there is no class of cases which, as a whole, gives more satisfaction.

The author's first case of intestinal obstruction occurred in a series of 42 vaginal hysterectomies, and was reported last year. Since then he has done nine vaginal hystero-salpingo-oöphorectomies for pelvic suppuration, and has had another case of ileus, the history of which was given in detail.

Pittsburg, Pa.

REPORT OF FOUR ADDITIONAL CASES OF UTERINE FIBROIDS COMPLICATING PREGNANCY.

M. ROSENWASSER, M.D.

(Original Abstract.)

To the four cases reported in the present paper, the writer adds abstracts of three previously published in the *Transact. Amer. Assoc. Obst. and Gynecol.*, Vol. IX., pp. 414-419. This report forms the basis of a discussion of the subject under the following headings:

I. BEFORE DELIVERY.

(a) In the interest of mother and child.

1. Non-intervention.
2. Myomectomy.
3. Porro operation.
4. Vaginal Cesarian section.

(b) In the interest of the mother.

1. Induction of abortion.
2. Hysterectomy.

II. AFTER DELIVERY.

(a) Non-intervention.

(b) Hysterectomy, indicated by

1. Recurrent hemorrhage.
2. Septic infection.

Non-intervention is recommended whenever, on account of its location, the tumor will not interfere with delivery, or when its moderate growth will admit of delay until viability of the child.

Myomectomy for pedunculated fibroids is a safe procedure; but the enucleation of fibroids before viability risks the life of the child, as abortions are frequent. After viability it is indicated when it is desirable and possible to preserve the uterus, or during labor when myoma of the cervix obstructs the pelvis and cannot be dislodged.

The Porro operation is the safest procedure after viability of the child or at term if the tumor obstructs delivery and if the uterus must be sacrificed.

Vaginal Cesarian section, as proposed by Dührssen, has not yet been tried.

Induction of abortion is considered more dangerous and less readily controllable than hysterectomy.

Distress from abdominal distension or pressure, interference with vital functions, great and constant anxiety may require hysterectomy as an emergency operation.

When the tumor is located in the lower segment of the uterus, or in the anterior lip of the cervix, or in the broad ligament and encroaches on the pelvic space so as to constitute a barrier to delivery, the patient is entitled to her choice of time of intervention, whether before or after viability of the child.

After safe delivery, only distinct indications warrant any intervention. Post-partum hemorrhage and sepsis should be managed the same as though no tumor were present. Hysterectomy becomes necessary during the puerperium when the hemorrhage cannot be permanently checked, or before infection or sloughing of the myomatous uterus, or the retention of the secundines have led to general acute septicemia.

Cleveland, O.

TECHNIC OF ABDOMINAL HYSTERECTOMY.

J. H. CARSTENS, M.D.

(Original Abstract.)

THE usual careful aseptic preparations. The patient in Trendelenburg's position. After freeing adhesions, the uterus and growth is pulled out of the abdominal cavity with the aid of a cork screw. The intestines are kept in place by abdominal towels. Clamps placed on each broad ligament outside of the ovary. The broad ligament is cut one-quarter inch from the clamps down as far as the latter extend.

A cut across the uterus anteriorly from the point of one clamp to the other through the peritoneum and separation of the bladder from the uterus. Another pair of forceps are now placed on the broad ligament down to the cervix and the balance of the broad ligament cut to the point of the clamps. The slight attachment to the vagina and anteriorly is now easily separated and the growth and uterus removed.

We now have four clamps, two containing each ovarian artery and two containing the uterine arteries. Each artery is now separately ligated with dry sterilized cat-gut. If the arteries of the round ligament are large, as they some times are, they also re-

quire a ligature. The clamps are removed, and the stumps and raw surfaces carefully covered with peritoneum by a running suture of dry sterilized cat-gut. If the cervix is removed a small opening is left for a temporary drain. If the cervix is left in, no drainage is used, except in septic cases when a puncture in the posterior cul-de-sac is made use of for a rubber drain.

His conclusions are as follows:—

First. In abdominal hysterectomy, clamp the broad ligaments and remove the growth and uterus.

Second. Ligate the four blood vessels separately.

Third. Cover carefully all raw surfaces with peritoneum.

Fourth. In cases without tears and healthy mucous membrane, leave in the cervix.

Fifth. Any diseased condition of the cervix and malignant growth, perform total hysterectomy.

Detroit, Mich.

INTRA-PELVIC ADHESIONS.

WALTER B. CHASE, M.D.

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(Original Abstract.)

In standard text-books on gynecology, very little space has been devoted to the distinctive topics of intra-pelvic adhesions, and it is surprising to find how little notice on the whole it has received from writers on gynecology and abdominal surgery. It would seem that their importance would entitle them to more study. Any surgeon of experience can recall not a few cases in which adhesions were the principal factors of trouble, often only relieved on opening the pelvic cavity. The symptoms sometimes are apparently out of all proportion to the gravity of the conditions existing. Other things being equal, diagnoses are easier made in the female than in the male, and in those having thin and more rigid abdominal walls. Localized abdominal rigidity has a special significance in appendicitis, ovaritis, and other acute inflammations affecting the pelvic viscera.

The character of the adhesions likely to be formed will vary according to the variety of inflammation producing them. Their plasticity and extent will be dependent on the dyscrasia of the pa-

tient and the proximity of the period of their formation. Recent adhesions lack the strength and resistance of older ones, and the friability of those formed in the presence of septic, tubercular and malignant conditions is marked.

In making the diagnosis use anesthesia if necessary, determine the nobility, in every direction, of the pelvic contents, as far as is consistent with conservative manipulation, and examine the patient by percussion and manipulation in the horizontal, upright, knee-chest, and Trendelenburg posture. Too forcible handling of the parts must be avoided as dangerous, and on the contrary careless or superficial examinations will fail to differentiate easily determinable conditions. A careful logical study of the antecedent history affords valuable information. From what previous inflammatory conditions has the patient suffered? What sequelæ are due to pregnancy, sepsis, tuberculosis, and syphilis? And has traumatism been a factor? If still in doubt abdominal or vaginal section may be needful and conservative.

The deleterious influences arising from the presence of intrapelvic adhesions are numerous and complex, being partly functional and partly mechanical. Constipation, due to narrowing the lumen of the gut, angulation, and impaired peristalsis is far reaching in its effects. Nervous disturbances, due to ovarian adhesions, and cystic irritability from bladder adhesions are more or less frequent.

The adhesions may be limited to a single band or be so extensive as to amalgamate all the pelvic structures. What shall be done with them? Sometimes the surgeon will let them alone and again their vicious influences will be the signal for their attack surgically. Where their presence is general it is obvious their obliteration is outside the limit of conservative surgery, yet in cases not a few, the removing of tension at some one point will afford measurable relief. The adhesions most difficult to manage cover in old abscesses, hold in position intraligamentous growths, or connect living placenta and intestines, following the rupture of ectopic gestation.

To prevent the development of adhesions, one must, naturally, prevent the occurrence of their antecedent septic and inflammatory process. To retard their development two drugs have been long known—potassium iodid and mercurials, and to them must be added another—gold and sodium chloride. The Brandt

method of pelvic massage claims recognition, and is undoubtedly useful. In the surgical treatment of adhesions per se, the danger is two-fold, the difficulty of controlling the hemorrhage, and the liability of new adhesions forming from the exposed raw surface remaining. To control the hemorrhage tying or torsion, or when this is impossible, pressure and the application of hot water, or occasionally permanent pressure by gauze packing. We have encouragement for the future in the use of Dr. Skein's Electro-Hæmostatic method. To prevent the formation of new adhesions, leave as little raw surface as possible, use absorbable ligatures, and wash with normal salt solutions what raw surface cannot be covered.

HOUSE TO HOUSE OPERATING.

EDWIN RICKETTS, M.D.

(Original Abstract.)

THE skilled abdominal and gynecological surgeon of today is a product of surgical evolution, to which no man ever gave such an impetus as the late and lamented Mr. Lawson Tait. From him we have learned that the best results depend upon simplicity, thoroughness, rapidity and rigid cleanliness; that his best work was done in house to house operating.

The advantages are many, and briefly are as follows: (1) The greater ability of the general practitioner to attend to the after-treatment, assisted by a competent nurse, the telegraph and telephone. (2) The absence of the mental dread of the patient to go into an institution, and the risk therein entailed, a condition by no means to be underestimated. (3) Iron bedsteads and improved household furniture are rapidly finding their way into country homes. (4) God's pure air, and undeniably, less liability to infection.

With reference to the use of antiseptics, it is necessary to mention but one fact, a quotation from Richelot, that "the elimination of all micro-organisms during the operation by antiseptics has not been attained." Consequently their use is to be condemned, and in their stead we should rely upon hot water, a dry wound, and rapid operating, which means a shorter time under the anæsthetic, a very important consideration.

Cincinnati, Ohio.

ECTOPIC PREGNANCY AT OR NEAR TERM, THE
FÆTUS LIVING.

L. H. DUNNING, M. D.

(Original Abstract.)

THE author alludes to the improved mortality of late years in operations in this form of pregnancy. Until within the last few months, all published tables have shown a less mortality to the mother when the fœtus has been allowed to die and the active circulation of the placenta has ceased. This is notably true in Harris' first tables and in those in Bland-Sutton's last work.

The last table of Harris' (Kelly's Operative Gynecology) and one of Ayers' (Obstetrics, February, 1899,) show the lessened mortality to mothers when the operation is done during the life of the fœtus.

The author has compiled these tables, taking the cases reported in the years 1894, 1895, 1896, and has added to them others which he has collected and tabulated. A summary of the compiled tables is as follows:

Summary of cases reported in the years 1894, 1895, 1896.

FÆTUS ALIVE AT TIME OF OPERATION.

	Number of cases.	Mothers recovered.	Percent- age.
From Harris' table.....	13	10	
From Ayers' table.....	7	4	
From Dunning's table.....	5	1	
	<hr/>	<hr/>	
Total.....	25	15	60

FÆTUS DEAD AT TIME OF OPERATION.

	Number of cases.	Mothers recovered.	Percent- age.
From Ayers' table.....	16	6	
From Dunning's table.....	17	13	
	<hr/>	<hr/>	
Total.....	33	19	57.7

The author believes that in the light of these statistics (which he thinks are the most complete and accurate of any heretofore presented) that the interest of the mother demands operative intervention sometime during the life and activity of her unborn child, and probably at the beginning of spurious labor.

Indianapolis.

WOUNDS OF THE LIVER AND BILIARY TRACT.

W. E. B. DAVIS, M.D.

(Abstract.)

The author said that penetrating wounds of the liver were not common. The surgeon may inflict such injuries in the treatment of hydatid cysts and abscesses of the liver. Severe wounds usually prove fatal from hemorrhage. There is often injury to the biliary canals of the liver and the extravasation of bile contributes to the fatal issue. He reported cases illustrating wounds produced by the surgeon.

One, a man aged 60 years, in which there was only $\frac{1}{2}$ oz. of pus found in the right lobe of the liver, but in searching for this small cavity a wound of very considerable depth and great size—perhaps two inches in length—was inflicted. There was very profuse hemorrhage which was controlled by iodoform gauze packing. Great quantities of bile were discharged for three weeks. Patient made an excellent recovery and he attributed this result not only to the drainage of pus but to the opening up of some of the biliary canals which resulted in the emptying of the liver.

Another case, a woman 30 years of age, in which there were attacks of pain, fever, and jaundice from a movable stone in the common duct, the liver became very much enlarged, and during an attack of peritonitis an incision was made, and the right lobe of the liver freely opened and packed with gauze. There was no pus in this case. Patient rapidly recovered. The liver returned to its proper size and the stone was passed some months after, when the patient was being prepared for a radical operation.

He also reported the case of a woman 60 years of age whose symptoms indicated obstruction of the common duct. The liver extended almost to the umbilicus. No nodules were to be made out on the surface. There being no obstruction in the common duct it was decided that the obstruction was in the hepatic duct or its branches. A free incision was made into the right lobe of the liver with the hope of opening some of the biliary canals and thus relieving cholaemia. Death occurred a few days after from exhaustion. The patient was almost in a dying condition at the time of the operation. A large malignant nodule was found at

the autopsy in the transverse fissure, which completely obstructed the branches of the hepatic duct.

He stated that wounds of the biliary tract beyond the liver produce death, not so much from the sudden escape of bile as from the continuous pouring of fresh bile into the peritoneal cavity. Gallons of fluid would not cause death if there were protective adhesions. He reported a case of gun-shot wound illustrating this point, where the patient was cured by repeated tapplings—large quantities of bile being removed at the first operations.

He also reported experiments on animals where adhesions had given way after two weeks and death resulted from peritonitis.

He said that rupture of the liver might be limited to the upper or lower surfaces, or that the organ might be completely torn through, the parts being held together by the veins. In four cases in which he had operated on dogs and removed more than 1-3 of the liver, all died. In one case in which he removed the extreme left lobe of the liver the animal made complete recovery.

He reported six cases of operations on animals illustrating the fact that small quantities of bile could be injected into the peritoneal cavity without harm. In one case he injected as much as 5 drachms of bile.

He reported twenty-three cases where he had operated on dogs to demonstrate the effect of bile in the peritoneal cavity. In those cases where there was only small escape of bile the animals recovered. Where there was considerable extravasation the animals died in from one to two days. The omentum and abdominal viscera in these cases would be highly bile-stained, but there was not the redness of the intestines that is observed in septic peritonitis.

He claimed that the treatment of these cases consists in promptly opening the abdomen, controlling the bleeding by gauze packing and drainage. He reported a large number of cases in which he had produced wounds on the gall-bladder and ducts of dogs which had been successfully dealt with in this way. The opening in the bladder or duct will close as quickly as the fistula of cholecystostomy.

He stated that it was not necessary to stitch the common duct after removal of a stone. Gauze packing and a glass drainage tube would protect the general cavity. He reported cases illustrating this.

BOOK REVIEWS.

WHAT A YOUNG HUSBAND OUGHT TO KNOW. By Sylvanus Stall, D.D. Published by The Vir Publishing Company, Hale Building, Philadelphia, Pa. 1899. Price \$1.00.

This is another of the Self and Sex series. Its author again shows himself capable and courageous. Its paragraphs are candid and clean. In their pages the author lifts the sacred relations of married life, out of the impure and vile thinking which have degraded manhood, debased and debauched womanhood, and robbed marriage and home of the blessing and happiness which God intended. It treats of matters of vital importance, is free from technical terms, is scientifically accurate, delicate and refined—a pure, clean and ennobling book. These pages are crowded with that information which saves from the sad consequences of blind blundering, and imparts the information which enables its possessor to escape the ills which ambush in mystery and ignorance. This book and its predecessors are worthy of the united endorsement accorded them by religious, secular, educational and medical periodicals in this country and in Europe, and deserve the hearty commendation which they have received from eminent men and women everywhere.

OVER ONE THOUSAND PRESCRIPTIONS, or Favorite Formulæ of Various Authors, Teachers and Practising Physicians. Second edition, revised and enlarged. Published by The Illustrated Medical Journal Co., Detroit, Mich. Price \$1.00.

This book presents in convenient form most of the prescriptions which have appeared in Leonard's Illustrated Medical Magazine. It is a neat and compact, interleaved, and convenient little volume, well suited to the pocket or satchel. The authors of many of the prescriptions are well known, though they have not written books. Hence we are glad to find the products of their experience put in this convenient permanent form. The numerous leaves inserted makes it possible to use the book continuously and have it grow more and more valuable.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

OBSTRUCTED NASAL RESPIRATION, INCLUDING ADENOID VEGETATIONS.

GEORGE A. LELAND, M.D.

In considering the subject of adenoid vegetations, it seems perhaps best to take up the whole subject of nasal obstruction, of which the adenoid growths are only one of the causes.

It is somewhere written that every vertebrate or perhaps every animal (especially the mixed feeder) has at birth a certain amount of lymphatic glandular tissue around the upper opening of the alimentary canal. This is the adenoidal tissue of His, consisting of lymph cells, conglomerate glands and follicles, and blood vessels (Sajous). In animals where the alimentary canal is but a single tube with a single round opening, this glandular tissue forms a ring about it, but in the higher differentiation as of the human species, where the top of the canal is more complicated and has several openings, this tissue is broken up into aggregations or knots as it were, being disposed in such a way that we have been said to have six tonsils in the vicinity of the mouth and nasopharynx. The two buccal tonsils are familiar. The third, or Luschka's tonsil, is situated in the top of the nasopharyngeal vault; and the fourth is placed upon the base of the tongue above or in the glosso-epiglottic fossa. Smaller aggregations are sometimes found in the fossae of Rosenmüller, or in that vicinity, which have been named the fifth and sixth tonsils. All these are connected by a chain of lymphatic tissue, so that this lymph-adenoid structure forms a complete chain around the opening of the alimentary canal. This structure probably shows a greater proportion of development about the time of birth than at any other time, both intrinsically and because of the very small vertical diameter of the posterior nares; but with

the establishment of nasal respiration certain parts, or perhaps all parts of it, should take on a more or less complete atrophy and disappear, so as to give rise to no troublesome symptoms;* but in certain cases they do not atrophy, and the reason does not seem to be well determined, unless it be that a little cold or digestive disturbance causes a vaso-motor relaxation in the nasal cavities, occluding the nose and so preventing the proper establishment of nasal respiration. This deprives the naso-pharyngeal space of its proper currents of air and, therefore, of its proper circulation, and an engorgement, or perhaps extreme hyperemia ensues, which either causes this tonsil to take on a hyperplasia, or at least not to come to its normal atrophy. On this account, therefore, in certain cases mouth breathing is established from the beginning of life, and all the consequences which so trouble children are ushered in with almost the first of mundane existence. In other cases, if at first nasal respiration has been established, an attack of one or more of the exanthemata either from obstruction of nasal respiration, from bacterial invasion, or from some other reason, causes a hyperplasia of these structures so that it is commonly found, after scarlet fever, measles, whooping cough, diphtheria, and so on, that the growth has attained a very marked increase in size, so as to throw the child into mouth breathing even when life has been advanced well on toward puberty.

Other agencies perhaps may be mentioned as having some influence on the size of this tissue, namely, the scrofulous diathesis, or a habit of vitality, or some such state which it is difficult to name.

These growths were first brought to the attention of the profession by the late Dr. Wilhelm Meyer, of Copenhagen, in November, 1868, but they did not seem to receive much attention until more than ten years later. I think it was in 1871 that Dr. J. Orne Greene, of this city, had a case of deafness in a child where he asked Dr. Langmaid to remove a growth posterior to the nose. This was probably the first case where the operation was done in Boston. Attention was not much attracted to it even in Europe until about '76, or a little later; and it was not until several years later that the late Dr. Hooper, of Boston, wrote up the subject and called the

*The natural food of infancy is sterile and the buccal and lingual tonsils not needed, but in after life the lingual tonsil becomes developed.

attention of the profession very emphatically to it; and yet now the presence of these growths, even to the greater or less occlusion of the naso-pharynx, is not recognized by a great many general practitioners, and I may say also, that the importance of their removal does not seem to be conceded by them and not even by some specialists in laryngology or otology.

The symptoms of naso-pharyngeal obstruction are probably more or less familiar to everyone, although everyone may not be able to refer them to their proper source.

The most obvious symptom of a total, or of a nearly complete occlusion of the naso-pharynx or of the nose is the characteristic facies. This is familiar everywhere about us to every observer; the open mouth, the dropped jaw, the flattened cheeks, the sagging lower eyelids, the pinched nose with the muffled voice make up a stupid or even a semi-idiotic expression. The air current passing into the lungs, unable to get through the nose, must go through the mouth whose structures are thus exposed to an atmosphere which is more or less impure, especially in our cities. The teeth, as well as the membranes of the tongue, fauces and pharynx, are exposed to the variations of temperature, dryness and poisonous qualities of the atmosphere. It must be that the delicate structures of the teeth and their surroundings, exposed to the alternations of the cold current going in and the warm current coming out, suffer from these deleterious influences, especially during the winter season, since then the changes are most marked. The bacteria of the atmosphere are deposited upon the mucous membrane of the mouth, which is not constructed to take care of them.

Another change in the mouth which is caused by this open countenance is asymmetry of the jaws. The lower jaw being dropped, the cheeks are left without support and so exert an inward pressure against the upper jaw; which occurring in the formative period of childhood retards the development of the superior alveolar process. In some cases this produces a pressure all round, so that the upper jaw is systematically but surely held back in growth, as it were, by the pressure of the cheeks and lips—not allowed to spread. Furthermore, the under jaw being dropped away from the upper, the under teeth do not force the upper outwards as they develop. The upper jaw, therefore, does not increase in size equally with the lower, and thus we often see, and I am very much surprised at the frequency with which I

do see it, a lower jaw of sixteen or twenty years of age with an upper jaw of twelve to fourteen, so that the teeth of the under jaw strike directly upon those of the upper or outside of them. Another deformity of the upper jaw is found where the pressure of the cheeks has come upon the sides especially and they are narrowed, but the forward part is allowed to project out under the nose. This form is found less frequently than the other and is doubtless increased by the habit of sucking the thumb, which tends to press forward the upper incisor region. This oblong jaw is sometimes seen with the symmetrically developed under-jaw, so that the incisors of the upper may shut from an $\frac{1}{8}$ to $\frac{3}{8}$ inch outside of the under ones, all the rest of the teeth coming in irregular juxtaposition (or the sides of the lower jaw being wider than those of the upper.) In both of these forms, it follows as a matter of course, that the teeth cannot be of their proper value to the owner in their masticatory functions, and the improper striking is probably productive of necrosis or other tissue change, or of irregular appositions which do not leave a perfect mouth either anatomically or physiologically.*

In both of these forms of upper jaw is to be seen often very marked the high arched palate: the molar regions of the sides coming nearer to each other cause the roof of the mouth to sharply arch upward, and I have seen this arch tilted out and angular on one side as if it had been done by a blow, and yet no blow or fall was remembered by the patient or his parents. This high-arched palate is a factor in the production of another very serious deformity, namely, deflection of the nasal septum. The nasal floor is parallel to the oral roof, and the lamina of bone between is a part of the superior maxillary bone—the palate plate. Between these two bones on the upper side is what is called the intermaxillary ridge, between which below and the ethmoid plate and the junction of the nasal bones above, is a certain space which is occupied by a thin perpendicular plate, the partition between the two nostrils, called the “septum nasi.” This consists of bone and cartilage, and is made to fit in between these two fixed points. If then the roof of the mouth is raised in a high arch, these two fixed points are approximated more or less and deflection of the nasal septum must result. This may cause occlusion of one or both nostrils according to the form of the deflection; and, I may

*It is probably true that these irregular appositions are occasional factors in the production of trifacial neuralgia in later life.

add, if the septum presents an even bend towards one side, there is apt to be atrophy of the structures in the narrow side from pressure, and hypertrophy in those of the opposite sides from increase of function. In some noses these conditions may obtain without catarrhal disturbances, but in most subjects hypertrophic catarrh as well as atrophic offensiveness is present.

In this connection it may be profitable to say something of the structure and physiology of the nose. It is composed of two nostrils divided by the septum as above mentioned. These nostrils are irregularly triangular spaces being narrow and short at the top, and somewhat wider and longer on the floor. A short way up on the outside of the nose attached to the inner wall of the maxillary bone is a small, thin, shell-like bone, the lower turbinate. At the top of the nose, and forming its irregular roof, is the ethmoid bone which is full of air spaces. Extending downward into the nostrils from this bone are two projections, one each side of the ethmoid plate—a part of the septum—which are called the second turbinated bodies. Also a small insignificant projection of this ethmoid bone is situated posteriorly at the top of the nose and is called the first turbinate, but is not of much moment except as a part of the area for the distribution of the olfactory nerve. The two lower, and to a less degree the second turbinates, are immediately invested by a mass of blood vessels of the nature of cavernous tissue. This has an erectile power which was first mentioned some thirty years ago or more by Dr. Henry J. Bigelow of Boston. Upon this cavernous sinus is a submucous layer containing mucous, serous, and a few fatty glands. Upon the outside of these turbinated bodies is a layer of epithelia, columnar and ciliated, which also invest the whole of the interior of the nose, and the naso-pharynx except the inner surface of the second turbinated bodies, the first turbinated bodies, and the parts of the septum contiguous—that is, the area of distribution of the olfactory nerve. Now because of this anatomical structure it is readily seen how beautifully adapted the nose is to take care of the atmosphere as it passes inward. The dust and other irritating particles are caught upon the moist surface and the ciliated epithelia waft them outward. The cavernous sinuses being under the control of the vaso-motor nervous system, which is a part of the sympathetic, respond readily to the state of moisture or heat of the atmosphere. When the atmosphere is perfect for

breathing purposes, say in June, these sinuses become empty. the structures shrink and the passages become wide open. Given a degree of cold or of dryness or of irritation, the blood rushes into these sinuses to narrow the nasal passages, the glandular activity is increased so that the muco-serum is poured out, and the straining properties of the nose are enhanced. It is well to bear in mind that the temperature of the body is $98\frac{1}{2}^{\circ}\text{F.}$ and that the delicate structure of the lungs and lining of the bronchial tubes is not adapted to receive air of a much lower temperature upon it. The nose stands sentinel to guard these delicate tissues. When we are out in an atmosphere of zero, for example, the nose is made to raise the temperature of the incoming air to a proper one, and it has been shown by G. McDonald that the temperature of the naso-pharynx is 84° when that of the external atmosphere is about 20° , and that from 35° it is raised to 93° ; and this warming has been done by the nose. It is a wonderful fact also that temperature of 113° is reduced to 92° , so that the nose really has the power to bring the air to nearly the body temperature whether from a lower or higher external temperature. By reference to the science of physics, we shall learn that the atmosphere loses a certain amount of water with the loss of every degree of heat. Air at zero and below is very largely deprived of its water, but in raising it to the temperature of the body its capacity for water becomes very great. Something must provide water for it. If we introduce air at a zero temperature through our furnaces without water in the pan, raising it to the room temperature of 70° , we find that our furniture and everything else in the house becomes exceedingly dry. How much more then is the hygroscopic power of the atmosphere raised when we bring it to the temperature of the body, 28° higher! And it has been demonstrated by this observer and others that the nose under certain conditions will throw out, if necessary, from one to two pints of water every twenty-four hours. In what a state, therefore, must the mouth, throat, and bronchi of the mouth breather be, whose membranes must supply the water for this cold insatiable atmosphere to take up! And yet we see during the winter eight people out of every ten breathing through the mouth. Aside, therefore, from the deleterious influences of mouth breathing upon the teeth, it is to be readily inferred that mouth breathers must suffer from pharyngitis, dry throat, from laryngitis and hacking

cough, and also from bronchitis, which is so prevalent during the winter months, and especially in mouth breathers. I saw a squib in a daily print some years ago stating that a new disease had come into vogue with the use of the bicycle, namely a dry throat or "pharyngitis sicca." I am very strongly of the opinion, in fact am absolutely sure, that, given normal noses or noses in reasonably good condition, pharyngitis sicca would be entirely unknown among bicycle riders if the nose were used to the exclusion of the mouth as a breathing organ, which is certainly its most important use. We have perhaps hitherto considered that the nose was made to smell with. But I wish to emphasize the fact that it is merely a suitable and convenient place in which to locate the sense of smell, and that the principal function of the nose is respiratory.

Obstruction to respiration in the upper air passages besides being the cause of the characteristic facies (which is almost a deformity) is also without doubt the cause of a deformity of the chest which is occasionally seen. The prominent sternum, the lateral depression of the costal cartilages, give what is known as the "pigeon breast," and it has come to be recognized that enlarged tonsils accompany this condition and they have even been assigned as the cause of it. It is doubtless a fact that the tonsils become diseased more or less through the agency of unprepared air, the irritating external air blowing directly upon them through the open mouth. It is also a fact that the general lymphatic tissues of this region are very much in sympathy, and that when we find enlarged tonsils, nine times out of ten the nasopharyngeal tonsil is enlarged also, and probably the nose has taken on an engorgement, or even hypertrophy, which produces obstruction even of itself. It is, therefore, this swollen condition of the whole region which produces the respiratory obstruction: and the "fighting for breath" which the respiratory muscles have to sustain produces this deformity known as "pigeon breast." It is, therefore, not sufficient to attribute it to the tonsils alone, although doubtless if the tonsils were not present and sufficient air could get down through the fauces, the obstruction would be less marked. But the point is worthy of notice that the tonsils are simply an index of the condition of all the lymphatic tissue of the region.

The most marked symptom of obstruction to nasal respiration, especially from the presence of adenoid growths, and the one

most far-reaching in its consequences, is, from my standpoint and I think also from that of the general community, earache and its sequelae. It seems to me also that this is the *most frequent* symptom, at least I have come to believe that in every child where earaches are common or even where they occur, adenoid vegetations must be present. They act probably mechanically more than in any other way to produce earache, since a slight swelling or slight hyperaemia probably causes a blocking up of the Eustachian tubes so that the drainage and ventilation of the middle ear are abolished and the circulation may be otherwise disturbed. If the enlargement of these growths is simply in the centre of the vault and posterior wall, their presence is not so demonstrative, and it probably takes a considerable cold or considerable swelling to produce this result; but if, as frequently happens, they are accumulated in the fossae of Rosenmueller and in the region of the Eustachian opening, probably a very little hyperaemic disturbance is sufficient. Their presence also in this locality in adults curtails the movements of the Eustachian mouths which should open and shut with every swallow: and a gradual oncoming of deafness or the extension of catarrh into the Eustachian tube or the presence of tinnitus aurium, the pulsating, beating, humming, or roaring kind, may be attributable to them. And I think that this is a most weighty symptom or the one most to be dreaded, because ear disease is so insidious in the first place; and in the second, because even a simple earache is almost never forgotten by the ear which suffers it; and especially is it to be deprecated if the earache goes on to rupture of the drum-head and to discharge, especially if this discharge continues for any length of time, since it is forever marked upon the drum-head that such an accident has been sustained. It is altogether too frequent in aural practice to have such people come for increasing deafness where the drum-heads show but too plainly that suppuration or rupture has taken place, which is an index of probably further change among the ossicles, which too often precludes any benefit from treatment in the present state of our knowledge of the subject. Hence an earache in childhood or infancy should be an object of the greatest concern on the part of parents if they are to insure hearing for their children when in the future they get to be of some value in the community. For I need not to assert that it is a terrible thing for a man in the prime of life

to become aware that he is rapidly losing his hearing, and to learn that it is because of the ignorance or neglect of those who were his guardians in his early life. Hence earache in children, and especially running ears, should always lead one to suspect adenoid vegetations; and if they are present they should be removed, and *thoroughly* removed, especially from the fossæ of Rosenmueller and sides of the naso-pharynx.

Other obstructions to nasal respiration, especially under seven or eight years of age, need only to be borne in mind and sought after perhaps simply to be eliminated, since they are so infrequent.

A frequent symptom of mouth breathing in young children is that very much dreaded disease called croup; that is, the false or spasmodic croup. The child retires at night, and after several hours of more or less noisy sleep which is so very common with adenoid vegetations, the household is thrown into consternation by the terrible clanging cough and difficult, stridulous inspiration of croup. Everybody is frightened by it; even physicians I have heard say, are themselves as much frightened as other people for their own children, although they must be aware that it is simply a dry laryngitis. It is the direct effect of the dry winter atmosphere warmed through the furnace striking without preparation upon the throat, pharynx, and especially the larynx of the little sufferer. A slight cold has been taken perhaps during the day, the growths in the naso-pharynx have been swelled up by it, mouth breathing has become an absolute necessity, a little hyperaemia of the structures of the throat with *dryness* brings on that terribly alarming midnight cry. It has been affirmed that these symptoms would very soon cease if the child's mouth is held tightly closed (if possible) and he is thus made to use the nose for inspiration. Except in extreme cases of this croup, where nasal occlusion is absolute, this method would probably be successful, although the usual remedies of steam and sprays to moisten the surface, or of hot baths and drugs to diminish the congestion and irritability will still be used to the exclusion of the apparently barbarous method of using force to keep the mouth closed.

There is another effect of mouth breathing which is easily inferred, viz., coryza or acute catarrh. The nose and naso-pharynx being deprived of the customary alternating currents of cold air in and warm air out, that is to say being disused, become overheated since they are very vascular in their structure. This means

hyperaemia, which also means hypernutrition, and this naturally leads to increase in size of all the structures in the upper air passages, namely the turbinated bodies, the glandular lymphatic structures of the naso-pharynx, etc. This of course means greater occlusion. It also means *contact*, and we know by experience that the contact of an irritant particle in the nose causes a flow of mucus to wash it away. The contact of two surfaces in the nose causes a similar flow which, being of longer duration, we denominate coryza or catarrh. The hyperaemic membrane in the posterior parts also secretes a mucus of less fluid consistency which means a concentration of its more solid elements, and thus the taste is brackish or saltish and disgusting; hence the habit of spitting to get rid of this nauseous secretion. The hyperaemia and engorgement of the glands causing the secretion to be less copious, it remains a longer time on the surface to become contaminated by the bacteria which are so numerous in this region, and hence an early decomposition; and the sputa from being white and frothy in the nearly normal nose and naso-pharynx, becomes yellowish or greenish and perhaps even crusty in more aggravated states. These secretions being expectorated freely during the daytime are involuntarily swallowed during the night, and also at other times when expectoration is inconvenient. Hence in cases of this description, *dyspepsia* is a very common symptom, a fermentative dyspepsia, caused by the introduction into the stomach of the countless germs which are found in the upper air passages. This must lead to malnutrition, to various digestive and alimentary disturbances, and so to a state of ill-health.

These naso-pharyngeal, lymphatic growths, hypertrophic and engorged with blood as above explained, are often from exertion or from crying or from anything which may flush the face, the prolific source of epistaxis, or hemorrhage, which I have seen become so frequent and alarming as even to blanch the little patients, and cause them to have such a puny appearance as to be the source of the deepest anxiety on the part of the parents. The presence of these growths also may excite more or less cough, which is especially nocturnal, or present mostly when the patient assumes the recumbent position. It will be readily seen also that the introduction of this unprepared air through the mouth will induce a hyperaemia of the buccal and faucial structures, and that not only do we have a pharyngitis of various kinds.

but the tonsils may become more or less enlarged. The irritation of these organs between the fauces and pressing upon the base of the tongue, together with the usually concomitant relaxed throat, may also be a factor in the production of cough, a dry, hacking, throat cough. This picture which has now been put together, namely, the frequent cough aggravated at night, with dyspeptic and alimentary disturbances, with hemorrhage from the nose and throat even bringing about a state of marked anaemia, together with the other symptoms which are so easily provided to complete it, has been called "pseudo-phthisis," which was so accurately described several years ago by a German author in one of the Berlin Medical Journals. To these, however, he added another important factor; namely, suppuration of the adenoidal growths which may be brought about by pressure or by the working of other causes in which bacteria must take a prominent part. Of course the swallowing of the pus from this suppuration must be more deleterious than the swallowing of the viscid mucus or muco-purulent secretion mentioned above.

Nasal occlusion from these growths and other causes being productive, therefore, of hyperaemia, is doubtless a factor in the causation of the frequent febrile attacks suffered by children and adolescents, which have no other explainable cause. Frequent headaches belong to the same category, and it is not unusual to see a child, or even an adult, where frequent raging headaches have no other explanation than that of respiratory obstruction caused by these adenoidal growths or by hypertrophy or other deformity in the nose itself.

Still another symptom of these growths is inability to apply the mind which was denominated "aprosexia" by Guye, of Amsterdam, a few years ago. He found that children in schools who were afflicted by this kind of respiratory occlusion were backward in their studies, took a low rank in their classes, and were spoken of as stupid and careless. This state in absence of deafness is to be explained either by the lack of proper lymphatic circulation, which perhaps does not carry off the effete material from a working brain or by a vaso-motor relaxation, both of which may produce a certain degree of oedema of the anterior cerebral region, namely, the region of mental processes.

The eyes are not unaffected by these disturbances of circulation in the nose and naso-pharynx, and frequently hyperaemic en-

gorgement in these regions is capable of producing grave disturbances such as astigmatism or other ocular defects, glaucoma, and the like.

I have thus spoken of nasal occlusion as being due mostly to adenoid vegetations in the naso-pharynx, now and then mentioning some of the other conditions. This is true mostly in young children. I may venture to say that probably 99 per cent of nasal occlusion in children under seven years of age is due to adenoid vegetations in the naso-pharynx; but the accidents of childhood begin to appear more and more frequently as they grow older. I think it is remarkable in my clinic and practice to find a nose that has a normal septum above the age of seven years. What the proportion is among people in general I am unable to state; but it is probably true that among patients presenting themselves for diseases of the ear, nose and throat, the septum nasi is very rarely in a normal condition. It is bent from one side to the other in different shapes, or it has growths upon one or both sides of it which may produce marked occlusion, or at least tend to deflect the air currents from their normal direction. And I think I have even seen cases where the sense of smell has been in abeyance or much diminished, because an enchondrosis or spur upon the septum has deflected the currents of air away from the olfactory region.

In patients above puberty, rarely younger, frequent colds have probably produced occlusion by inducing hypertrophic rhinitis. The turbinated bodies having been thrown into a state of marked engorgement by frequent colds, show the effect of hypernutrition, so that the nasal cavities are more or less occluded. The open mouth and the perverted air currents through it are just as common in these cases as in young children with naso-pharyngeal lymphatic hyperplasia.

These various disturbances of circulation, both of air, of blood and of secretions, may bring about degenerative changes which manifest themselves in polypi or in other tumors, benign and malignant, in the nose, which may give us the same symptoms of nasal obstruction in later life.

There is one cause which perhaps is as frequent and just as deleterious as all the others for producing all of these states above alluded to, except perhaps those which can be attributed to trauma, viz: the deflections and exostoses and enchondroses—

and this very common cause is *habit*. There is perhaps no more potent factor in the establishment of mouth breathing than habit. The nose being partially or wholly occluded by a cold, the mouth is in such proximity that it is the easiest thing in the world to begin to breathe through it. Frequent colds make this more frequently operative, and very soon the habit is established. The civilized mother does not seem, as a rule, to insist that the sleeping infant shall use its nose as a respiratory channel, as George Catlin, back in the forties showed us that the Indian mother always does; and it is far less surprising to me now than formerly to have cases present themselves for catarrhal conditions where there is no obstruction whatever and where nasal respiration is perfectly possible; but where the only cause of the whole difficulty is the foolish *habit* of mouth breathing. It is astonishing also to find so little complaint among people in our dusty cities of the taste and discomfort of their mouths exposed to the dry and dust-laden atmosphere, containing ingredients of all sorts, from horse manure to iron dust. Certain investigations in the city of New York a few years ago of the dust of the atmosphere, showed a most wonderful conglomeration of materials. If we only knew all the things which the dust may contain we would certainly be impelled simply by horror to keep our mouths shut. My friend, Dr. W. B. Clark, of New York City, told me that he had a case of diphtheria of quite aggravated form in a young lady, who, with her father, returned home from some entertainment late in the evening. The wind was very high and the dust was exceedingly dense. The father having catarrh, and feeling the discomfort of the condition in his upper air passages, employed his douche and gargle to free himself from the inconvenience; but the daughter did not take these precautions, and in two days came down with diphtheria. It is immaterial whether these were habitual mouth breathers or not and one case may *prove* nothing, but the instance is simply given to emphasize the fact that the dust-laden air is doubtless disease-laden, and when we contemplate the amount of sputa from consumptive, catarrhal and diphtheritic patients, as well as from those suffering from other diseases, and the trying nature of our climate at certain seasons of the year, it must be seen that the air blowing through our streets is laden with disease at every breath; but if these germs and these disgusting elements in the atmosphere are caught upon the surfaces of the normal nose,

which are approximated by the vaso-motor system responding to the necessities of the case, and which are moistened by the flow of mucus and are swept clean by the ciliated epithelia, it is evident that the nose is our protector from the thousand and one evils which are hidden from us by their infinitesimal size.

It is a curious fact that in the London Hernia and Truss Hospital, the proportion of patients with nasal obstruction is very much larger than among the people at large, and it is astonishing that one symptom of nasal occlusion or obstruction should be a rupture of the inguinal, femoral or umbilical fascia; but a moment's thought will convince that the tremendous efforts to clear the nose by blowing are accompanied by such an abdominal pressure as may be productive of just these lesions—futile attempts at clearing the nostrils, out of which cannot be blown growths which are a part of, or springing from, the nasal structures themselves.

Other symptoms of nasal obstruction may simply be mentioned; for example, sneezing and reflex neuroses, such as asthma, epilepsy, etc., which come from abnormal contacts in a sensitive region. The nervous twitchings of chorea, even aggravated into convulsions, have been reported as the result of naso-pharyngeal growths, the removal of which has caused them to cease; stammering, stuttering, loss of voice, are also attributable to these lesions. Together with these last mentioned, Lennox Browne also brings forward the red nose, the disturbance of whose circulation is not confined to the interior; the irritation of whose discharges causes cracks and fissures, which not only contribute to the redness of the external surface, but are also even the entering place of the erysipelas bacillus, and it is not infrequent to find patients with these unsightly lesions who have suffered from numerous attacks of erysipelas. Oedema of the nose and conjunctiva, the latter of which is a frequent symptom in paroxysmal coryza (or rose cold and hay fever), and is called chemosis; and other symptoms have been enumerated by the same author, but they need not be detailed lest this paper become of wearisome length.

Having drawn a picture so dark and so full of evil, the question arises how to avoid it or to remedy it. This brings in the question of treatment; but first of all, it should be impressed upon the people with whom we come in contact that *mouth breathing* is an

absolute evil, and that *nose breathing* is the only proper method. And first of all, the habit must be inculcated by the parents. As it is true that the nose is occluded by disuse, it is also true that the passages can be made larger, that hyperaemias can be dissipated, that some movable obstructions may sometimes be done away with by nasal respiration; and where there is no marked hypertrophy, or any bony or cartilaginous growth upon, and no deformity of, the septum, and no polypi, or adenoidal tumors, it is my custom to recommend *absolute nasal respiration*, carried on with the desperation even of a drowning man, as the best method of treatment for the patient to use himself. It is better than douching and spraying with liquids, since *the nose was made for air and not for water*. It is an old saying that "we can lead a horse to the trough, but we cannot make him drink"; it is just as true that we can make the upper air passages perfectly patulous, but we cannot *make* the patient breathe through them; that is something which he alone can do and *must* do himself. This rule should be impressed upon him as strongly as any of the natural laws, for infractions of this law are as punishable as those of any of the natural laws and hence the habit should be inculcated from the first breath of life. When there are obstructions to respiration, of course they must be removed. Spurs and enchondroses in the nose must be sawn away, drilled, chiselled, or otherwise removed. Deflected septa should be set up into place and made to grow there, which is perfectly possible, and is the best method of procedure in a great many cases. Adenoid vegetations and other soft growths of the nose and naso-pharynx should be removed. Adenoid vegetations, which perhaps claim most attention, if not in large amounts or of a hard variety, may be removed by simply scraping the surface of the naso-pharyngeal membrane with the absolutely sterilized finger-nail, as is recommended by Guye, above mentioned. Various forms of forceps have been used, and within a few years Gottstein has invented a curette or shave. In hospital practice or even among private patients where pain is a secondary consideration, scraping with the finger-nail is very efficacious, and has the advantage that the operator is able to feel what he does and so can avoid doing harm. It is probably somewhat painful, but as a child's sensibilities seem to be abolished in proportion to the loudness of his cries, it probably does not occasion very much discomfort. The operation with

the forceps is tedious, must be done during anaesthesia in most cases, but gives the advantage of being able to get at the growth in its entirety. The youngest child I have etherized for the performance of excision was eleven months, and the oldest patient thirty-four years. General anaesthesia is best in young and refractory children, especially if the parents are desirous that they should suffer no pain, and where the growths are fibrous and hard, as in some cases; but with the Gottstein curette and with a light degree of primary anaesthesia, the operation can be completed in an exceedingly short time, even in much less than a minute after the ether has been taken; and it is probably as efficacious as the other method, since if every atom of the growth is not removed, it is immaterial, since atrophy of what remains usually takes place, if *nose breathing is established*. Operations have been done about here mostly with the forceps.

It is probably true, however, that in from three to four per cent of the cases the growths recur. This has been disputed by some operators, but I am certain that it is a fact, and that the cause of the recurrence is doubtless that the habit of nasal respiration was not formed after the operation, or that it was impossible from nasal occlusion. Hence it is not proper to perform the operation for adenoid vegetations when there is obstruction to respiration anterior to them, and so per contra it may occur that with the establishment of the lumen of the nostrils, vegetations in the naso-pharynx will disappear. It is the custom thus of the writer in certain cases to proceed to remove the nasal obstruction first in order to make the recurrence less likely, and in these cases it is not unusual to witness the total disappearance of the growth as soon as nasal respiration is established.

Prognosis: As has been mentioned, recurrence may occur in from three to four per cent of the cases, provided nasal respiration is not established, and provided the obstruction is not sufficiently removed. Given a child who suffers from these symptoms in a more or less marked degree, the abolition of mouth breathing brings about one of the most brilliant results in laryngological surgery, of not in all surgery. Given a child, as described above, who is run down, pale, lifeless, having frequent nose bleeds, with nocturnal cough, with dyspeptic disturbance, with stupid, open countenance, by the removal of these growths from the naso-pharynx, secreting this bacteria-laden muco-purulent or purulent

secretion, the restoration to robust health, to red and full cheeks, to bright eye and lively movements, to big appetite and healthy performance of function, is not only brilliant, but sometimes astonishing. The child who is suffering from earaches, or from running ears, or from frequent or periodic deafness has those troubles wiped out, as with the hand of fate, by the removal of these growths. Or one who is backward in his studies and with a stupid expression and muffled voice, and is reckoned as heedless and dull, is restored to brightness, to mental activity and to a proper standing among his fellows simply by the removal of a growth in the naso-pharynx, which may not be larger than the ends of his two thumbs. But it is obvious that one of the most far-reaching reasons for their removal, except for earache and its consequences, is that the jaws shall maintain their proper relationships; that the teeth shall be, with the gums into which they are inserted, protected by the closed lips which should remain *ever* closed to every inspiratory current; that the secretions of the mouth should not be made to decompose, infected by the multitudinous bacteria introduced by inspiring (at rest) twenty cubic inches of air twenty times a minute through the mouth which has almost no function whatever to protect itself against this invasion.

George Catlin, mentioned above, wrote in the forties, a book of great significance, called the "Breath of Life." Right across both covers, in large white letters, to be seen even with greater prominence than the title of the book itself, were printed the words: "Shut Your Mouth." I can only make a modern application of that in closing; namely, in order to enjoy the pure breath of life, take it through the nose, and not only shut the mouth, but influence the mouths of the community at large to remain shut to every inspiration of the "breath of life."

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REVIEW OF PEDIATRY.

INFANTILE MORTALITY.

Dr. Daniel L. Thomas, in an interesting report made after the investigation of 388 deaths of infants under one year old in one of the London districts in the year 1898, makes the following suggestions as to the causes of this mortality, which averaged 208 deaths to each 1,000 births:

1. Poverty.—On account of poverty and other causes wives work in factories, etc., even when pregnant. They are known to work up to within a day or two of their confinement. These conditions expose the mother to all sorts of risks, and very often cause the child to be prematurely born. * * * Even when the child is born at full term and healthy, it does not stand a normal chance of surviving. The mother has soon to return to work, and the child has of necessity to be brought up on artificial food. This is not all: the mother cannot afford to pay a proper person to look after the child, and very often it is placed in the care of another child who is probably only a few years older. The risks to which a child thus placed are obvious.

2. Illegitimacy.—The mortality amongst illegitimate children is twice as high as it is amongst legitimate children. Fortunately, the number of children thus born in this district is very low when compared with England and Wales. In 1897, only 12 illegitimate children were born in the District, which is equal to 1 in 166 births, whereas in the rest of England and Wales it was 1 for every 20 births. The number of illegitimate children is very much larger in agricultural than in industrial districts. In Shropshire there was 1 illegitimate for every 11 legitimate births two or three years ago. If the mortality was not so high every twentieth person that you would meet would be an illegitimate.

3. "Overlaying," or Suffocation of the Child whilst in Bed with the Parents.—Seventeen inquests were held during the year on infants belonging to this District, which had died in this manner. It may be interesting to notice that this accident occurs much oftener on some days than on others: 12 occurred on Friday,

Saturday and Sunday, and only 5 on the remaining four days of the week.

4. Unhealthy Surroundings, and a Want of Sufficient Fresh Air and Daylight.—A great many children are brought up amidst unhealthy surroundings. A great many of the courts and alleys contain houses from which daylight is almost totally excluded, and this means lowered vitality to the inmates. In many homes work is carried on daily by the parents, and the nuisance arising from fish offal, skin-dressing, and other similar occupations, must be injurious to the health of the children.

It is surprising how difficult it is to persuade people that fresh air will not injure children. They block up every aperture which might serve as an entry to fresh air and an exit to the foul air, and think that by so doing they serve the best interests of their children.

5. Hereditary Diseases.—Diseases in the parents are often accountable for weak children. In some instances these diseases cause the children to be prematurely born, in other instances the children are born at full term, but the iniquities of the parents are visited upon the children. Under this heading might be included alcoholism in the parents. The question of whether acquired characteristics can be transmitted need not trouble us, but it must be admitted that habitual drunkenness in the parents does tend to produce feeble children. Not only does drunkenness affect the children by causing the inherited capital with which the child starts life to be deficient, but it also acts indirectly on the infant in this way: that often the surroundings are unhealthy, and the mother neglects the child.

6. Insurance.—It is often stated that infants that are insured stand a far worse chance of living than children that are not insured. I have been told that some of these are insured before they are born. The fact of there being a slight monetary advantage derived from its death is asserted to render the mother more careless of its health, and less anxious to rear it. I am not in a position either to prove or to disprove the above statement, but I have made inquiries from some of the best authorities. Knowing that Mr. Wynne Baxter, the coroner for East London, at every inquest he holds on children particularly asks whether the child is insured or not, I made inquiries of him. He told me that 75 per cent of the children that die and are the subject of

investigation by him are insured, but at the same time he does not think that the fact that they are insured has any influence or bearing on the death. Mr. Baxter's experience shows how prevalent the practice is amongst the poor of East London, but his opinion as to its effect must also be held as the highest and best in London.

The other conditions that may possibly be improved I will first briefly enumerate, and then discuss more fully in giving the different diseases that they are responsible for.

1. *Insanitary Dwellings.*—By this term I do not mean that the conditions which exist are ordinary, and remediable in the usual way. Many houses are insanitary by reason of their position, and can never be rendered sanitary except by the clearance of adjoining sites or other structural alterations.

2. *Improper Feeding.*—During the siege of Paris, the infant mortality was reduced to one-half of the average it had been for several years, though the ordinary death-rate had doubled. This was due to the mothers being obliged to suckle their babies, on account of the scarcity of milk and other food.

Improper feeding may be sub-divided into:—

- (a) Starchy food.
- (b) Sour milk—condensed and otherwise.
- (c) Unsuitable and dirty bottles.
- (d) Germs from diseased cows.

Bronchitis, Pneumonia and Broncho-Pneumonia.—Of the 65 deaths that I inquired into, 16 of the families had moved, 32 of the children were brought up on the breast, and 17 artificially. These diseases in infants have several causes; but undue exposure, insanitary conditions and insufficient clothing are the chief. There is nothing worse than to take an infant of a few months old to a concert, theatre, or a music-hall, and then from that hot and crowded room to expose it to the cold night air. This happens often in the East End of London.

Summer Diarrhoea and Gastro-Enteritis.—Out of 110 deaths from this cause about which information was obtainable, 59 children were fed artificially, and 29 are stated as having been breast fed, although as 8 of these were between the ages of one and two years it is likely that they had other food besides their mother's milk.

The use of starchy foods for children under six months of age

is much to be deprecated, as their digestion is practically impossible.

Four inquests were held where the jury brought in verdicts of acute inflammation of the stomach, due to improper feeding, and one of convulsions, due to improper feeding.

Convulsions are more common in infancy than in adult age, and more especially towards the time of teething.

It is quite possible that there are several deaths registered as convulsions that are really due to overlaying. The appearances of the body after death are very much alike, and even if a *post-mortem* examination be made it is very difficult to distinguish between the two.—(*Treatment, September, 1899.*)

The September issue of *The Postgraduate* has five excellent articles on Pediatric subjects. From two of them we wish briefly to abstract a few practical points.

THE MANAGEMENT OF BREAST MILK.

Under this heading Dr. Augustus Caillé says: "The diet and exercise of the nursing mother are of great importance in the production of good milk. Liberal feeding and no exercise will frequently give an over-rich milk with 6 per cent fat; hard work, together with poor food, is responsible for a very poor milk with less than 1 per cent fat. Irregularity in nursing makes good milk bad milk, and frequent nursing is found to give a concentrated milk and produce colic in the child; too prolonged intervals in the nursing is apt to decrease the total solids and produces a milk easily digested but not nutritious. A very concentrated milk may be very nutritious, but it is difficult to digest. * * * During the catamenial period the breast milk changes in composition inasmuch as the fat percentage is low; but as this period of depression lasts but a few days and former conditions are again established, the appearance of the menses is not a direct contraindication for the breast; finally it is well to remember that all secretory and excretory organs of the body are in close touch with the general circulation, and powerful drugs are apt to exert their effects upon an infant through the medium of a nursing mother. * * * If the milk is over-rich the mother is to be placed upon a plain diet, and the phlegmatic, inactive, lazy mother should be made to engage in active exercise (e. g., walking.) If the milk is poor at the

beginning of nursing, appropriate efforts should be made to increase the percentage of fat by allowing the mother a liberal diet of albuminoids (eggs and meat), and curtailing exercises. Liquids (beer, porter) increase the flow of milk but do not enhance its richness. Fat does not increase fat. * * * To *approximately* determine the percentage of fat present in the milk under investigation, a small calibre test-tube graduated from 1 to 100 is filled to the 100 mark with milk pumped from the breast, an indefinite quantity of ether is added thereto and the contents thoroughly shaken. After the lapse of half a day, on standing, the liquid separates into two layers, ether and fat, and milk minus fat; then, for example, if the point of demarkation between the two layers is at 97, we have 3 per cent fat represented in the specimen examined."

THE TREATMENT OF CHRONIC ECZEMA.

With regard to the care of this obstinate condition, Dr. Henry Dwight Chapin suggests: "The first thing to accomplish is to completely free the skin of all the dried exudation. It must first be softened by oil or some antiseptic solution. If the latter is used, the part is wrapped in sheet lint that has been moistened with bichloride of mercury (1 to 10,000) or carbolic acid (1 to 100) and the whole surrounded by oiled silk. After about twelve hours, the exudation is usually sufficiently soft to be rubbed off by pledgets of cotton dipped in oil or vaseline. If most of the body is to be treated, it is better not to use the carbolic acid solution, particularly in very young infants, for fear of a possibly poisonous effect. A very good way to remove the exudation is to wrap the part with lint that has been soaked in sweet oil, and bandage as above. We have now to deal with an inflamed skin that has been completely freed from the products of inflammation. After trying many salves, the preparation known as Lassar's paste has usually given the best results in the Babies' Ward. Its composition is as follows:

Salicylic Acid.....	1 part.
Zinc Oxide.....	25 parts.
Starch	25 parts.
Vaseline	50 parts.

"In very young infants this may be diluted with equal parts of Ung. Ac. Boric or Vaseline. This paste is rubbed into the skin.

and the part covered with a bandage. When the face is affected a mask of lint is employed. The dressing is renewed once a day, the skin being first completely cleaned off with pledgets of cotton covered with the boric acid ointment or vaseline. This is to remove the paste that has been applied the previous days, so that a fresh supply can be rubbed in. * * * The treatment can be applied equally well to one limb or the whole body."

DIPHTHERIA FROM BIRDS.

At the Congrès pour l'Avancement des Sciences held in Boulogne September 14-23, Dr. M. E. Féré of Bordeaux presented a report of work done to determine the specific cause of this disease. He detected the Klebs-Loeffler bacillus and proved its virulence by antitoxin tests. His observations were confirmed by Dr. Bouchard and by Dr. Rapin of Nantes. The congress then voted to call the attention of the authorities to the danger of such epidemics among birds and the consequent transmission of the disease to mankind.—*Le Bulletin Medical*, September 23, 1899.

HEART DISEASE IN CHILDREN.

Dr. Philip S. Barbour, in a paper presented before the Kentucky State Medical Society in May, 1899, makes the following interesting observations:

"The liability to organic diseases of the heart and the infrequency of functional troubles may be mentioned as a peculiarity in childhood. The day has long since passed when rheumatism was classed as a disease affecting only adults. Now we know that it is very often observed in children, and I would have you note just here that rheumatism is much more apt to attack the heart of the child than that of the adult. * * *

"'Growing pains,' which are so unworthy of notice by the laity, are such harbingers of rheumatism, and oftentimes precede only shortly acute endocarditis. A wryneck or a tonsillitis may be the only manifestation of a rheumatic diathesis, but woe to the child whose physician is not thereby put on the alert. Chorea and erythema marginatum are equally significant, and all such cases should be watched closely by the physician, who may be able to prevent endocarditis, though his therapeutic skill would be taxed to cure it.

"Endocarditis is not always easily diagnosed in children. Heart sounds have not that definiteness that is acquired in later life.

They are heard all over the chest, and in many cases may be auscultated best at the back. The second sound on the pulmonic side is louder than on the aortic. The extreme rapidity of the heart's action, coupled with the fact that the first sound is shorter and sharper than obtains later, makes the differentiation between the two sounds sometimes difficult. In addition to these, functional, anemic, and other murmurs conspire to perplex and baffle the diagnostician. * * *

"But the outlines of heart dulness and the position of the apex beat vary with the age of the child. The heart seems to occupy a more horizontal position in the child's thorax than in the adult's, for the apex beat is normally outside the mammillary line and in the fourth interspace. Toward the fourth year the apex reaches the nipple line and the fifth interspace, and thereafter approximates more and more closely the position it is to occupy in after years. So hypertrophy of the left ventricle in the child produces very great deviation of the apex beat to the left, and a bulging of an enlarged precordial area. Mitral insufficiency is the most frequent lesion resulting from endocarditis, though the prenatal attacks are more apt to produce lesions of the right side of the heart. The fact that endocarditis may occur in childhood without those disagreeable sensations, pains, palpitation, etc., that are noticed in some adults, should make us very careful in our treatment of infantile rheumatism to watch for and guard against the development of endocardial inflammation. It must not be forgotten that rheumatism is not the only disease that will produce endocarditis. Scarlet fever, diphtheria, and even measles have their quota of cases, and demand just as intelligent forethought on this point.

"The course of endocarditis in children is very annoying and trying to the physician. It is absolutely necessary to keep the child in bed, to give the proper quantity and quality of food, and to maintain, through weeks of time, absolute rest, even though the child feels all right and is anxious to get up. Yet after the long and intelligent conduct of such a case, the departure of a loved nurse, the giving up of some pleasure, may produce an exacerbation of the trouble, and the whole battle must be fought over again. The tremendous influence of the nervous system must be kept in mind always. Then such agents as the iodids, which do such yeoman service in our adult cases, are not well borne by chil-

dren when given for great length of time, not even the iodid of iron.

"The disappearance of endocardial murmurs is sometimes noticed about puberty. Aortic stenosis seems to have the best prognosis in this respect of any of the valvular lesions. The natural growth of the heart must produce also an increase in the size of its openings, which may be sufficient to remove most of the obstruction at either the aortic or mitral orifice.

* * * * *

"The ease with which compensation is effected in childhood is remarkable. * * * Children have the advantage over adults in that growth is with them a normal process, and the heart very easily accommodates itself to increased work; and also in the fact that they are not sufferers from various conditions found in adult life, such as the vices of alcohol, tobacco, tea, etc., that are obnoxious to a healthy circulation. But while hypertrophy and hence compensation are easily attained in childhood, yet no precautions should be neglected that tend to prevent endocardial or myocardial inflammation, for there is a limit even in youth to perfect adaptation to circumstances. * * * Acute dilatation is likely to develop in childhood as the result of severe acute diseases, and must be guarded against in such cases as well as in typhoid fever."—*(The American Practitioner and News, June, 1899.)*

MALARIA IN AN INFANT.

Dr. F. S. Clark of Cleveland reports the following case:

"The child was born and is living in a modern house on a street that has been paved for several years and has not, recently at least, been torn up for any purpose. There had been no recent excavations in the neighborhood. Neither the mother nor father had ever been in a malarial district, nor had they or their other two children ever had malarial fever.

"I first saw the child in July, 1898, for indigestion due to weaning. It was then four and one-half months old. I saw it only four or five times till early in January, as it was well with the exception of occasionally a little indigestion.

"About January 9, 1899, the child had an attack of 'bronchitis.' As I could not be reached another physician was called. According to the mother's statement there was a severe cold and cough.

The stools were loose, green, curdy, and full of mucus. This condition was said by the physician to be due to the 'cold.'

"On January 19 I was called to take charge of the case. I found the conditions as described above, also that the temperature, which to my surprise had not been taken, was 103° .

"The mother said that at certain times of the day, not always the same, the child seemed perfectly well, bright and playful. At others it seemed cold, drowsy and languid. Examination of the chest showed only an occasional coarse râle. The abdomen was tympanitic. The spleen could not be palpated because of the straining and fretting of the child, though percussion showed some enlargement. The baby was well developed though very anemic, and its muscles were very flabby.

"The temperature varied from 100° to 105° up to January 23 when it dropped to 98° in the evening, where it remained till the following afternoon, when it rose to 105° . During the first days the treatment was somewhat expectant, the bowels rapidly becoming normal after a change of food.

"My diagnosis was uncertain, as malaria at such an age was not expected. Typhoid was hardly probable from the symptoms. When the temperature fell on the 23d and rose on the 24th I suspected malarial fever, but it was not until the 25th that the first quinin was given. Because of the large amount of work on hand at the time I could not examine the blood till the 26th, when I readily found hyaline plasmodia, confirming my suspicions. Another examination was made on the 28th with like results. The temperature-curve is sufficient to make a diagnosis, and the recovery of the child by the use of quinin removes any doubt which might arise in the mind of the most skeptic.

"The manner of administering the quinin was difficult to decide. Thayer says one or two grains three times a day for a child under six years of age will be followed by a rapid disappearance of symptoms. In the more chronic forms when the smaller organisms are found, longer treatment and larger doses may be needed. In the pernicious form, relatively larger doses may be given and well borne. He quotes Ferreira as having given 15 grains in 24 hours to an infant under one year with no apparent ill effects. Holt suggests the use of one grain of the bisulphate in solution. If it causes vomiting it is to be given by the rectum. If the sulphate is used he gives eight to ten grains daily and has

doubled the amount with no bad symptoms noticeable. My first attempt was to give a one-grain suppository four times a day. After finding the plasmodia I gave five-grain suppositories twice a day for one day with no effect. Bisulphate was not retained and I tried the quinin chocolates, one grain every two hours. This the baby soon refused to swallow and I gave of the plain sulphate one grain in fluid extract of glycyrrhiza every two hours. For two days the child had twelve grains each day, then eight grains a day and finally three grains for a few weeks, the decrease being made as the temperature became normal, which had been prompt. One uncertainty is whether the suppository and chocolates had so much effect that the quinin, as last given, had an effect sooner than if they had not been given. This is quite probable, but in another case I should choose to use the latter method and expect to see a correspondingly prompt result. The child made but little objection to this method and at no time was there any evidence of any symptoms of cinchonism.

"There never were any paroxysms nor any sweating stage. The child became very cold, but only when the temperature was the lowest. The greatest drop was on the 27th, when it fell eight degrees. Today it is perfectly well, with no evidence remaining of its experience."—(*Cleveland Journal of Medicine*, July, 1899.)

INFANTILE MENSTRUATION.

Dr. G. A. McBride reports the following unusual case:

"Mrs. M., aged 34, nationality half Indian and half white, is the mother of four children—two boys and two girls. The last is a healthy, well developed girl, who was born April 27 last. When only two days old she began menstruating, the flow being very free for two days, then gradually disappearing. There was no possibility of the flow being due to any injury—it was a typical menstrual discharge."—(*American Journal of Surgery and Gynecology*, June, 1899.)

BROMOFORM POISONING.

J. C. McMichael, A.M., M.D., says:

"The last dose in the bottle' would form a fitting title for each one of the dozen cases of bromoform poisoning reported in the various journals during the past few years. The case reported here illustrates the same point in the administration of the drug. The patient was a child of five years who had been suffering with

pertussis. A three-ounce mixture, containing one dram of bromoform and one grain of codein had been prescribed, a teaspoonful to be taken every three hours, a shake label being on the bottle.

"The child seemed to be doing nicely until the *last teaspoonful* in the bottle had been given; she then complained of being sleepy and in a few minutes sank down in an unconscious condition. I saw the child a few minutes later. Her condition was such as one would expect in a child doing nicely under chloroform anesthesia. She was perfectly relaxed, respiration easy and natural, no cyanosis, pulse regular and strong but easily compressed, the pupils small but not markedly contracted. Efforts to arouse her were unsuccessful. An emetic nauseated, but in her relaxed condition she was unable to empty the stomach. Friction in a hot mustard bath, after a little while, seemed to bring some resistance into the muscles and shortly after this she was able to vomit. In about two hours and a half after taking the medicine she awakened as from a deep sleep, no further unfavorable symptoms appearing.—(*Bulletin of The Cleveland General Hospital*, April, 1899.)

DRINKING MILK.

There is a right way and there is a wrong way to drink milk, and the great majority of people drink it in the latter way. This is the real reason why milk disagrees with so many people; at least it is one of the chief reasons. Milk contains all the elements necessary for maintaining the physical health of those who know how to use it properly. Indeed, most people would be better off physically if milk and entire wheat bread formed their ordinary diet. Especially is this true of delicate persons whose powers of digestion have become enfeebled. Persons suffering from nervous prostration are not able to digest meat, and will find great benefit from a purely milk diet, but the milk must not be imbibed like draughts of water; it must be sipped slowly, a teaspoonful at a time. There is a scientific reason for drinking milk very slowly, and in very small quantities; it is this: Milk curdles as soon as it comes in contact with the juice of the stomach. If a long draught of milk is taken into the stomach, the result is a large curd through which the gastric juices cannot readily penetrate and act with solvent power. A small sip of milk makes a tiny curd, so if a tumbler of milk is taken sip by sip, it will readily be seen that the result will be a number of little curds, each one of which can

speedily be acted upon and digested by the gastric juices of the stomach.

Where special nourishment is desirable, as in the case of very weak persons, or convalescents from wasting diseases, beef and wheat peptones may be added, or some one of the infant foods which are known to be absolutely free from starch.

It is unwise to add starch foods like farina or arrow-root or corn-starch to the milk for weak people or invalids, under the impression that the foods are very delicate and easily digestible, for they are, on the contrary, very difficult of digestion. Milk alone is far better for persons who have weak digestive powers, but the one great need which must be impressed on every one is the need of drinking slowly and in very small sips with intervals between the sips. In nine cases out of ten, milk drank in this manner will agree with people unless there is some fault with the milk. The milk of a healthy cow that has free range of good pasture and all the pure water she needs is the only sort of milk that is wholesome. A cow that is kept in confinement, no matter how clean and light her stall is, cannot maintain good health, neither can she furnish healthy, wholesome milk, because exercise is as important to an animal's well-being as are open fresh air and sunshine. Matters are not mended, but are really made worse, if the cow is tethered out of doors by a short rope, which not only does not permit her to exercise, but worries her into a feverish condition, making her milk less than poisonous. The cow sees everywhere about her green spreading pastures in which she may not graze. A more aggravating and fretting condition of affairs could not well be imagined, unless it was to allow the animal to agonize with thirst in sight of cool waters. To throw the cow piles of grass and fodder, and to give her a couple of pails of water every day, but still to leave her tied, is simply to keep the life in her and no more. A cow under such conditions never thrives, but is continually feverish, and her milk is injurious to all who drink it. This is an incontrovertible fact. It has been proved by chemical analysis over and over again. Families going into the country cannot be too particular concerning sanitary conditions where milk and drinking water are in question. First be sure the milk comes from healthy cows whose milk is derived from open sunny pastures; next to be sure that the milk is sipped or taken in small quantities at a time. Water may be taken in long draughts without danger, provided the system is not weak and overheated by running or other exercise, but milk should always be imbibed slowly, and with intervening intervals.—*American Journal of Health, September, 1899.*

BOOK REVIEWS.

THE HYGIENE OF TRANSMISSIBLE DISEASES. By A. C. Abbott, M.D. Illustrated. Published by W. B. Saunders, 925 Walnut Street, Philadelphia, Pa. 1899. Price \$2.00, net.

The publication of this volume, devoted to the causation, modes of dissemination and methods of prevention of diseases, is indeed a tribute to the triumph of hygiene. The reputation of Professor Abbott is not limited to the University of Pennsylvania nor its graduates, many as they are. It is, therefore, a great privilege that the medical profession are to be allowed to share in the wisdom and experience of these lectures on General Hygiene, for such the subject matter of the book essentially is.

In many cases the specific cause of the disease is not known, and in others, while we know the cause, we can not yet control it completely. But we are all anxious to know the latest authoritative statements that can be given us. The author considers at length all the common infectious diseases and some of the uncommon ones, such as Cholera, Bubonic Plague, Actinomycosis, Madura Foot and Dengue.

Following are many pages devoted to prophylaxis, chemical disinfection, physical disinfection, isolation, quarantine, etc.

The paper, printing and general make-up of the volume are of this publisher's best, and no more need be said of any book.

THE MECHANICS OF SURGERY. By Charles Truax. Published by the Author, Chicago, Ill. 1899. Price \$4.50.

The name Truax is a well known guarantee to the worth of surgical apparatus. The volume here presented is a very complete descriptive catalogue of all sorts and kinds of surgical instruments and furniture. The author has by no means limited himself to goods which he manufactures. But doubtless his experience in making and selling has inspired his effort in medical, or more strictly speaking, surgical literature. The illustrations and descriptions are excellent. A good feature, not a common one, is the list of instruments and furniture needed in given operations or lines of work. The instruments used by physicians for diagnosis or treatment are not neglected, but as carefully expounded as the others.

We are continually hearing of new apparatus and desire to know just how it looks and is used. The answers to such questions are here at hand. The mercantile idea is not present at all, but a true, scientific consideration given each article discussed.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Dorland, A.M., M.D. Second edition. Revised. Published by W. B. Saunders, 925 Walnut Street, Philadelphia, Pa. 1899. Price \$1.25.

It is not strange that this very excellent little volume should have exhausted a large edition in six months. Such convenient, well bound, finely printed, accurate, scientific books for ready reference are all too few in number, and are sure of appreciation by the profession. We have indicated where we place this volume. 26,000 words are satisfactorily defined, tables of muscles, nerves, veins, arteries, bacteria, drugs and their doses, and many others which are found only in a complete work are all here presented, and in a space scarcely larger than that of our Visiting List. The thumb index adds not a little to the value of the book.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE HOSPITAL SERVICE OF THE UNITED STATES, for the fiscal year 1898. Published by the Government Printing Office, Washington, D. C., 1899.

This hundredth report of our national medical corps, comprising 850 pages, is well worthy the perusal of all medical men. Naturally much space is given to reports as to the causes, course and treatment of those two great scourges of our South, Yellow Fever and Small Pox.

Those of our subscribers living within the most infected areas will be much interested in these reports. Articles on Aneurism, Anthrax, Hernia, and various wounds will interest surgeons, while those on Consumption, Amaurosis, Beriberi, Leprosy and Disinfection will be of great value to the general practitioner.

If you feel that the medical department was a little remiss in the late war, read these reports and learn what they did and tried to do.

A COMPEND OF GYNECOLOGY. By William H. Wells, M.D., with illustrations. Second edition. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, Pa. 1899. Price 80 cents.

The Quiz Compend of these publishers are everywhere recognized as standard. This new edition is but another evidence of their purpose to keep them fully up to date. The general plan of the work is not changed. But new illustrations are added to an already well illustrated book, and the new operations, of which so many have been developed in the last few years in gynecology, are concisely but fully described. New methods of diagnosis and non-surgical treatment, too, receive sympathetic and wise discussion. As a review book for the student, or a suggestive book for the practitioner, we cordially commend it.

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ORIGINAL COMMUNICATIONS

A STUDY OF 61 CASES OF APPENDICITIS, 30 OF WHOM WERE OPERATED UPON.

DR. FRANK T. MERIWETHER.

WHILE my title includes all the cases of appendicitis that I have seen, I shall speak but briefly of those treated medically, laying stress upon those operated upon, for in these the pathological conditions are known to have existed, and no mistake can be said to have been made in diagnosis. While these cases are not large in number, they present features illustrative of the general characteristics of the disease and confirm me all the more in the opinion that appendicitis is a surgical disease. The more salient points in each case is noted, for it is only by presenting the cases in this way that the profession, particularly those who oppose the operative treatment, can be brought to look at this disease as a surgical one.

Of the medically treated cases, 31 in number, four died, a mortality of 13 per cent, and if these cases were all traced no doubt this mortality rate would be increased. In all these cases operation was advised, though those that died were *in extremis* when I saw them.

Of the operated cases, 30 in number, three died, a mortality of 10 per cent. But of those lost after the operation, not by the

operation as is often said, no one can by any means attribute the fatality to the operation *per se*. In one case the patient had been treated by a practitioner for five days after general peritonitis had developed; in another case, also with general peritonitis, the mother delayed operation until the boy's father could reach Asheville, and in the third, death was caused by neglect, though it is likely that he would have died anyway, for he also had a general peritonitis.

The four cases that died of those treated medically, were the only ones of that series that developed a more or less general peritonitis, and while they might have died even if operated upon, it is possible that one might have been saved. It is the duty of the surgeon to offer operation to these cases, even if a stigma is cast upon surgery, for it is the patient's only chance for life. We have all seen cases, not only of appendicitis but other serious diseases, such as rupture of the bladder, in which we could offer but little hope, and yet the patients have recovered. In two of the cases reported, very little hope was offered the family, but they, accepting, the operation was done, and the patients both recovered.

I shall include in my statistics only those cases operated upon.

Of the 30 cases, 16 were females and 14 males. The average age was 23 2-5 years, there being 16 cases 21 years and under, 24 cases 30 years of age and under. Between 21 and 40 years there were 12 cases, and 2 over 40. The youngest case was 5 years old and the oldest was 55. It was very difficult to obtain the history of previous attacks. Many cases had had attacks of severe cramp colic, so-called, which were probably appendicular, but no importance being attached to them they were forgotten.

In ten cases concretions were found, in one case it being of a thick gelatinous character, and in four cases the concretion was single. Except in the case of the gelatinous material the concretions were composed of fecal matter, though in two cases a small amount of vegetable fibre was found imbedded in the mass. In one case the concretion was the shape and size of a cherry stone; and it was only after division and thorough examination that its real nature was determined.

In only one case was vomiting marked, while in five cases there was no vomiting.

In eight cases the bowels were loose, six of these being

gangrenous cases. This looseness of the bowels was in nearly all of the cases due, I think, to the administration of cathartics or salines by the family physician before I saw the cases and contributed not a little to help to make the operation a success.

Liver dullness was lost in all the pus cases, and also in one case where pus was not present. In one of these cases the pus was well walled off. In only ten cases could the appendix be palpated with any satisfaction, and in these cases the position and conditions determined by palpation were verified by the operation. Whether this inability to palpate the appendix was due to lack of skill or not I do not know, but I think in many cases nothing but an indefinite resistance can be felt, particularly when the appendix points southwardly or lies outside of the cæcum. The rigidity of the oblique muscles and the distension of the cæcum makes it nearly impossible to feel the appendix. One can often approximate its position by the lines of resistance felt, but I doubt if in all cases an absolute diagnosis can be made of the conditions present.

An interesting feature about one of the cases reported (case XXII.) was that though there was no pus present, and only a small amount of serum, the infection was so virulent that I was infected upon the hand, and that, without a break of the skin. Within an hour after the operation a burning was noticed at one of the hair follicles on the little finger of the left hand, and in 18 hours a vesicle had formed. Septic chills with quite high temperature were experienced. Cultures from the vesicle showed the presence of the streptococci pyogenes, staphylococci aureus, and one colony of the colon bacillus. A very minute perforation of the tip of the appendix was present in this case.

In many cases the appendix looked apparently normal, possibly only congested, but a thorough examination of the calibre after hardening, and a microscopical examination of its walls always revealed signs of pathological lesions.

I have had opportunity to examine post mortem three cases whom I had seen during acute attacks, and who had refused operation, the patients dying from other disease. Two of these cases had marked flexions of the appendix and commencing erosion of the walls with probably bacterial invasion, the other case having adhesions. While these cases might have gone for years without having a fatal attack of the disease, the probability is

that sooner or later a concretion would have formed in those with the flexions, and probably in all three peritoneal infection would have taken place. Of the 27 cases which were treated medically, and who did not die, not all of them can be said to have been cured. Three of them ruptured into the bowel, two have masses in their sides at present, six have more or less continual pain in their sides, and the probability is that sooner or later some of them will come to operation.

In all of the cases the McBurney incision was used, and in no case was it very difficult to reach the site of the appendix. In several cases it was necessary to sever the fibres of the internal oblique, but these were all drainage cases so it made but little difference. In all the cases in which free pus was present, eight in number, drainage was established by gauze. In two cases a fecal fistula formed, but they were closed by the end of the third week. Through and through suturing was used in a great many of the cases, but at present I prefer suturing the layers separately, and using the sub-cuticular suture, all of catgut. Suffering after the operation seems to be much less with the sub-cuticular stitch, probably due to the fact that the cutaneous nerves are not injured as much as in the interrupted suture. In most of the cases the appendix was inverted and buried with a purse string suture; this reinforced by Lembert sutures. All raw surfaces were buried as far as possible.

I do not always advocate the operation necessarily to save life, but in many cases to prevent suffering and loss of time from business. I have now under observation three cases who have attacks at intervals varying from one to six months, and who lose from two days to two weeks, suffer greatly and are necessarily much alarmed as to the outcome, and yet whose condition at the time of the attacks did not justify my insisting upon operation in order to save life. It is true that many of these cases get over their attacks, some never to have them again; but when we consider the low mortality of the interval operation, and the high mortality of the delayed operation, the uncertainty of the exact condition of the appendix, or the outcome of the next attack, I think we are justified in advising early operation in every case.

I have tried faithfully and honestly to look at it from a more conservative standpoint, but the cases, such as I see them, all force me to surgery as the only treatment of this disease.

CASE I.—Age 35, male. Two previous attacks; morning temperature usually 97 3-5. Appendix easily palpated. Pulse rather slow; constant pain and soreness over the appendix. Constipated with occasional nausea. Attended to his business affairs as usual up to time of the operation. Tip of appendix gangrenous small concretion, and slight local peritonitis. Cured.

CASE II.—Age 35, female. One previous attack. Had been in bed for three days, with a temperature of 100 to 102, pulse of 88. Very constipated, almost impossible to move her bowels. Right rectus very rigid, great pain over appendix. The appendix was flexed upon itself, and had probably contained a concretion which slipped out during the manipulations, for there was an eroded spot looking much as though it had been the seat of the mass. The walls of the appendix were full of micro-organisms, mostly cocci, which were not differentiated. Slight local peritonitis. Cured.

CASE III.—Age 40, female. Three previous attacks. Very severe pain, requiring large amounts of morphia. Pulse not much accelerated, temperature at times going to 100. Operation done in interval. Appendix acutely flexed, the convexity pointing downwards. Apparently at times fecal matter would fill up the appendix, and the pain was caused by peristalsis, in its effort to extrude the foreign body. No destruction of the mucosa had taken place, but the operation was done, and was justifiable in order to save pain. Cured.

CASE IV.—Age 14, male. First attack, though there was a history of an occasional colic. From his history he had had a perforation three days before I saw him. There was but little pain after the colic attending the perforation. Temperature went to 101 the first evening, and steadily went up to 104 2-5, pulse going up to 120. Operation was delayed because of desired presence of the father. Free pus in abdomen, general peritonitis, gangrenous appendix, with large concretion partly extruded from it. Died.

CASE V.—Age 24, female. Several previous attacks, all of them attended with a great deal of pain. Appendix felt distinctly. Nausea and vomiting was marked. Appendix contained debris, and there was a marked stricture near its junction with the caecum. The mucous membrane was entirely destroyed at the tip and the walls were crowded with cocci. Cured.

CASE VI.—Age 17, male. Four previous attacks. Patient

layed up in bed for several days from these recurrences, and also had frequent colic lasting several hours. Appendix palpated, and operation during the interval. Appendix six inches long, one-half inch in diameter, and much congested. Stricture at its middle; its distal end contained mucus and epithelial debris. Cured.

CASE VII.—27 years of age, female. Seven previous attacks, most likely to occur at the time of menstruation. Temperature 99; pulse 80. Had been treated for ovarian disease. Appendix flexed, adherent to the ovary, and three strictures, also small concretion. Streptococci in the calibre, and cocci in the walls. Cured.

CASE VIII.—Age 19, male. Two previous attacks. Great pain and colic every few months, and two attacks which had been diagnosed as appendicitis. Right rectus kept more or less rigid all the time. Operation revealed appendix much congested, flexed upon itself, and adherent to its own base. Cured.

CASE IX.—Age 25, female. Previous attack. The one attack she had had was marked by high temperature and rapid pulse. Had been advised to have operation during attack. Appendix had stricture closing it entirely, forming a little sac which contained mucus, and epithelial debris. The tip looked as though it might become gangrenous. Cured.

CASE X.—Age 13, female. One previous attack. Temperature 102; pulse 110. Right muscle very rigid. Sick for three days when I saw him. Appendix flexed with a stricture and in the end a mucous inclusion, which was almost inspissated. Slight erosion of membrane, and invasion of walls by bacteria. Cured.

CASE XI.—Age 21, female. No previous attacks. Seized with pain suddenly while at work. Temperature 12 hours later, 98; pulse 100. Tympany, liver dullness lost; not much pain at time I saw her. Appendix gangrenous, concretion, perforation, free pus and general peritonitis. Cured.

CASE XII.—Age 45, female. One previous attack. Always had had pain at menstrual period. One attack diagnosed as appendicitis, lasting for two weeks, temperature going to 100. Appendix palpated. Appendix contained a small concretion, was sacculated, and the sac contained a gas, forming bacillus, which was not identified. Cured.

CASE XIII.—Age 9, male. Two previous attacks. Frequent

colics, always localized, on right side. Muscles rigid, and could feel nothing. Temperature when I saw him was 100 1-5. Appendix angry, red, and the tip was gangrenous. Only local peritonitis was present. Cured.

CASE XIV.—Age 21, male. Two previous attacks. Said to have had an attack in which an unfavorable diagnosis had been given. Felt discomfort in right side all the time, appendix was flexed, much congested, and there were four strictures. Infiltration of the walls by bacteria. Cured.

CASE XV.—Age 5, female. One previous attack. Former attack lasted for five days. Appendix could be felt, being fully a quarter of an inch in diameter. Operation showed appendix markedly flexed upon itself, adherent to the cæcum near its origin, and containing quite an amount of fecal matter; local peritonitis. Walls showed large number of colon bacillus. Cured.

CASE XVI.—Age 10, male. Several previous attacks. Three weeks before had had an attack which apparently subsided then redeveloped. Three days before I saw him temperature commenced to go up, and at time of operation was 102; pulse 96. Pus was walled off; liver dullness lost. Perforation, concretion large one. Appendix gangrenous. Only local peritonitis. Cured.

CASE XVII.—Age 18, female. Two previous attacks, both at time of menstrual crisis. Has been treated for ovarian trouble. Nothing but an indefinite resistance could be felt in the side, but tenderness was marked. Appendix had an almost impermeable stricture, but the distal end was empty. Slight erosion of membrane, and walls filled with cocci. Cured.

CASE XVIII.—Age 29, male. One previous attack about a year ago, lasted for two days, and which was diagnosed as an attack of colic. During this attack he worked during the first day, though he must have had the perforation early in the morning. Temperature at time of operation was 103; pulse 116. This was 36 hours after the commencement of the attack. Liver dullness lost. Marked tympany. No pain, though tenderness. Appendix gangrenous, full of pus, large perforation. Appendix seven inches long. Free pus and fecal matter in the cavity of abdomen. Drainage used. Fecal fistula for three weeks. Cured.

CASE XIX.—Age 20, female. Five previous attacks. Twelve hours after the commencement of the attack her temperature was normal, and pulse 120. Great pain, which decreased as the tem-

perature and pulse went up. 36 hours after the attack commenced she was comfortable; pulse 100; temperature 101. Under the use of opium suppositories her condition became better, though the relation between the pulse and temperature became distorted. The morning of the operation her temperature was normal, the pulse being 108, but during the day both pulse and temperature began to rise rapidly, and general condition looked unfavorable. This was the fifth day of the disease, and operation was delayed because one of the consulting physicians objected to operation. A large amount of free pus and fecal matter in the peritoneal cavity; two perforations in the appendix which was gangrenous. General purulent peritonitis present. Irrigation and drainage. Cured.

CASE XX.—Age 16, male. This was his first attack. Three days before operation had severe colic; normal pulse and temperature. Very tympanitic; had vomited once. Morphia relieved him, and salts given the next morning caused patient to feel easy. Still tympanitic. No rise of temperature at any time, the pulse never going above 80. Worked in stable the morning of the operation. Tympany becoming more marked; abdomen very tender. At operation appendix found gangrenous large perforation, through which fecal matter was escaping. General purulent peritonitis; no attempt to wall the pus off. Patient went off the table with a pulse of 80 and a temperature of 99. Drained. Patient lived for six days, and died from neglect. Two hours after the operation he got out of bed to cool himself off. Never any suppuration in the incision, but pulse went up gradually to 110, becoming weaker all the time, while the temperature remained normal. I doubt if he was fed half the time, and no care was taken of him in any way.

CASE XXI.—Age 12, female. One previous attack two years ago. Present attack lasting for seven weeks, with a temperature never normal, and ranging from 99 2-5 to 102 2-5; pulse from 90 to 110. Appendix could be felt enlarged and thickened. Had been in bed during entire attack. Constant pain in right side. Appendix eroded, full of pus, and an impermeable stricture near the cæcum. Softened where the first ligature was tied, necessitating a second one. Cured.

CASE XXII. Age 39, female. One previous attack, six weeks before. Commencement of present attack three days before

operation. Temperature went to 99.3-5; pulse 116 to 120. Marked pain, tympany; and rigidity of right muscle, it standing out very distinct to the eye. Liver dullness almost lost. Temperature dropped to normal, but the pulse stayed at 120, and not so strong. Much congestion of the intestines. Thick plastic fibrinous adhesions; serious effusion. Appendix angry, red, eroded and stricture. Minute perforation, pulse and temperature went to normal and stayed there. Cured.

CASE XXIII.—Age 12, male. One attack six months before and so diagnosed. Colicky pains marked. Operation fourth day, as the temperature seemed to be going up. Appendix curled upon itself, containing inspissated mucus under the microscope, showing cells arranged in whorls, and a few crystals. Stricture half inch from the tip. Local peritonitis. Cured.

CASE XXIV.—Male, age 29. Previous attacks, diagnosed as indigestion. Slight chill, temperature going to 102; pulse 90 to 96. Right rectus very rigid. Appendix congested, angry, red, small amount of pus in tip which was eroded. Marked local peritonitis. Cured.

CASE XXV.—Age 27, female. Several attacks for past three years, most apt to occur at menstrual period. Temperature would go to 103. Pulse 120 to 140. Sweating, slight chills. Appendix adherent to ovary, eroded, walls filled with cocci. Temperature at once to normal. Cured.

CASE XXVI.—Age 18, female. Four previous attacks at short intervals. Colic pains severe, laying her up for several days at a time. Appendix adherent, and eroded. Two strictures. Cured.

CASE XXVII.—Age 55, female. Several previous attacks. Temperature would go to 105; would be confined to bed from four days to two weeks. Slight tympany. Pulse 116 to 120. Tongue foul, bowels very difficult to move. Appendix adherent, stricture, small pocket near tip, remainder obliterated, pocket eroded. Temperature dropped at once to normal. Cured.

CASE XXVIII.—Age 20, male. One previous attack. Said to have had typhoid fever last year. Intense pain at first, but it stopped. Liver dullness lost. Marked tympany. No peristalsis; face dusky. Temperature at time of operation, 60 hours after commencement of attack, 101.2-5; pulse 96. Marked congestion of intestines and peritoneum. General peritonitis, appendix 7½ inches long, half inch in diameter, filled with pus, concretion stop-

ping. opening into cæcum, gangrenous. No drainage. Small fistula for two days, with pus of fecal odor, but no fecal matter. Probably not connected with bowel. Cured.

CASE XXIX.—Age 22, male. Several previous attacks not diagnosed, one in spring laying him up for three weeks. I saw him the fifth day; temperature 99; pulse 100; but thin. Has had chills, sweats, and high temperature. No pain after the first day, very tympanitic, liver dullness lost. General peritonitis, large amount of purulent effusion, partly walled off by dense adhesions, intestines very dark. Appendix gangrenous, filled with pus, fecal odor to effusion, but no apparent perforation. Died from exhaustion.

CASE XXX.—Age —, female. One previous attack, one six weeks ago, and frequent colic. Operation on fourth day. Had had marked pain with temperature rise, but it had subsided on second day. On third day had probably had chill with sweat; temperature 101 2-5; pulse 108. Abdomen very tense, mass in side, general pain and tenderness. Pulse wiry. Tongue foul. Appendix gangrenous, and contained pus, perforation, marked local peritonitis, nature commencing to wall off, thick adhesions, but not thoroughly walled off. Two days after the operation developed jaundice, due, no doubt, to a septic peri-hepatitis, from the extension of inflammation along ascending colon. Cleared up in a few days. Most perfect convalescence, except for that. Practically no discomfort after operation. Cured.

Asheville, N. C.

No.	Age	Number Previous Attacks	Vomiting	Bowels	Concretion	Perforation	Condition of Appendix			Pus	Walled Off	Palpation	Result	Tympany	Peritonitis	Liver Dull- ness	Sex
135		2	Slight	Constipated	No	Yes	Partly gangrenous		No	Partly		Felt	Cured	No	Slight, local	Present	M.
235		1	Slight	Constipated	No	No	Eroded, flexed and adhesions		No	No		Nothing	Cured	No	Slight, local	Present	F.
340		3	Slight	Constipated	No	No	Acutely flexed		No	No		Nothing	Cured	No	Very slight, local	Present	F.
414	First	Several	Slight	Loose	Yes	Yes	Gangrenous		Yes	No		Nothing	Died	Yes	General	Lost	M.
525	Several		Marked	Constipated	No	No	Eroded, stricture, adhesion		No	No		Felt	Cured	No	Slight, local	Present	F.
727		4	Slight	Constipated	No	No	Congested, and stricture		No	No		Nothing	Cured	No	Slight, local	Present	M.
815		2	Slight	Constipated	Yes	No	Stricture, flexed, adhesions		No	No		Nothing	Cured	No	Slight, local	Present	F.
915		1	Slight	Constipated	No	No	Congested, flexed, stricture		No	No		Felt	Cured	No	Slight, local	Present	M.
925		1	Slight	Constipated	No	No	Stricture, flexed, stricture		No	No		Nothing	Cured	No	Slight, local	Present	F.
1013		1	Slight	Constipated	No	No	Stricture, flexed, mucous inclusion		No	No		Nothing	Cured	No	Slight, local	Present	M.
1121		0	Slight	Loose	Yes	Yes	Gangrenous		Yes	No		Nothing	Cured	Yes	General	Present	M.
1245		1	Slight	Constipated	Yes	No	Congested, sacculated, contains gas		No	No		Felt	Cured	Yes	Slight, local	Present	F.
1319		2	None	Constipated	No	No	Angry, red, slightly gangrenous		No	No		Nothing	Cured	No	Slight, local	Present	M.
1421		2	Slight	Constipated	No	No	Congested, flexed, stricture		No	No		Nothing	Cured	No	Slight, local	Present	M.
1515		1	Slight	Constipated	No	No	Adhesions, flexed, marked		No	No		Felt	Cured	No	Slight, local	Present	F.
1610	Several		Slight	Loose	Yes	Yes	Gangrenous		Yes	Yes		Mass in site	Cured	Yes	Local	Lost	M.
1818		2	Slight	Constipated	No	No	Stricture		No	No		Nothing	Cured	No	Slight, local	Present	F.
1923		1	Slight	Constipated	Yes	Yes	Gangrenous, pus in callibre		Yes	No		Nothing	Cured	No	Slight, local	Present	M.
1925		1	Slight	Loose	Yes	Yes	Gangrenous		Yes	No		Nothing	Cured	Yes	General	Lost	M.
2016		0	Slight	Constipated	Yes	Yes	Stricture, eroded, pus in callibre		Yes	No		Nothing	Died	Yes	General	Lost	M.
2112		1	None	Constipated	No	No	Stricture, eroded, stricture		No	No		Felt	Cured	No	Slight, local	Present	F.
2230		1	None	Loose	No	No	Angry, red, eroded, stricture		No	No		Nothing	Cured	Yes	Marked, local	Lost	F.
2312		1	None	Loose	Yes	Yes	Stricture, eroded		No	No		Felt	Cured	Slight	Slight, local	Present	M.
2434	Several		Slight	Constipated	No	No	Congested, angry, red, pus in dip		No	No		Felt	Cured	Slight	Marked, local	Present	M.
2527	Several		Slight	Constipated	No	No	Eroded, adherent		No	No		Felt	Cured	Slight	Slight, local	Present	F.
2618		4	Slight	Constipated	No	No	Eroded, adherent		No	No		Nothing	Cured	No	Slight, local	Present	F.
2755	Several		None	Constipated	No	No	Stricture, small, pocket, adherent, obliterated		No	No		Nothing	Cured	Slight	Slight, local	Present	F.
2830		3	None	Constipated	Yes	No	Gangrenous, pus in callibre		Yes	Partly		Nothing	Cured	Marked	General	Present	M.
2922	Several		Slight	Loose	No	Yes	Gangrenous, stricture, pus in callibre		Yes	Partly		Nothing	Died	Marked	General	Lost	M.
3030		3	Slight	Loose	No	Slight	Gangrenous, stricture, pus in callibre		Yes	Slightly		Nothing	Cured	Slight	Marked, local	Diminished	F.

A PLEA FOR EARLY OPERATIONS IN APPENDICITIS.

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THE question of when to operate in appendicitis is one of vital importance to the medical profession and one that greatly concerns the laity. My opinion is that all cases of appendicitis should be operated upon as soon as diagnosed, with possibly a few exceptions. My reasons for this decision are based on the following facts: first, appendicitis is purely a surgical disease and should be treated accordingly; secondly, there is no known medicine that will either abort or modify the course of the disease; thirdly, nearly all cases recover if operated upon before perforation of the appendix has taken place, and by operating on all at once you will prevent this complication in a large number; fourthly, up to the present time we have discovered no symptoms that will enable us to determine the pathological changes going on in the diseased appendix, and until we can do this, it is better to operate on all cases. If you could determine by the symptoms which cases were going to terminate by resolution and recovery without a perforation and which ones would go on to gangrene, perforation and peritonitis, then I should only advise an immediate operation in the latter cases and use the expectant plan of treatment in the former.

When you take into consideration the anatomy of the appendix and cæcum, and the fact that you find pyogenic microorganisms often associated with fecal matter in the appendix in all cases of appendicitis, it would be preposterous for us to expect a very large per cent of permanent recoveries without an operation. If you operate on all cases at once you will operate on some that would have recovered had they not been subjected to the operation, but by so doing, you will include a large number of cases that would have perforated and caused peritonitis and probably death had the operation not been performed. Admitting that you do operate in some cases that would recover without the oper-

ation, you do no particular harm, and you insure them absolutely against a recurrence. On the other hand, if you wait for urgent symptoms to appear before operating, the delay may, and often does cost the patient his life, then who is to blame?

Some surgeons advise you to wait until the acute symptoms subside and then operate during the interval of quiescence. If you pursue this plan, what will become of those cases of fulminating appendicitis that terminate in gangrene, perforation, peritonitis and death in from 24 to 28 hours? Do you gain anything in those cases by delay?—but some will say operate in such cases at once. The question is, then how are you going to distinguish the more dangerous cases from those of a milder form, or those that will terminate more favorably? With our present knowledge of the nature of the disease, it is absolutely impossible for us to answer.

This fact has been thoroughly demonstrated to me time and again in cases coming under my observation. To illustrate this, I will report a few cases I have had in my practice.

CASE I.—Robert R., age 40, consulted me April 20, 1898. He had complained of occasional pains in region of McBurne's point, for two or three months and at times considerable soreness in right side, although he was not aware of ever having had any fever. Appetite had always been good, but after I called his attention to it he said he had noticed that he was occasionally bloated after eating. He informed me that he had consulted one of our prominent physicians, who had diagnosed appendicitis, but had told him that an operation was not necessary and that he would recover without it. His slow progress towards a recovery caused him to consult me. I examined him carefully and found only a slight tenderness over McBurne's point, no rigidity of muscles that was perceptible; he had no fever, and his general condition was fair. I was satisfied that he had trouble with his appendix and advised an operation as the quickest and safest means of relief, but told him he might get well without it. He went to the hospital and the operation was performed the 22nd of April; recovered and went home in 14 days. The appendix was five inches long; the lumen was occluded or stricted at the cæcal extremity. It was highly inflamed and contained two or three drams of pus, with absolutely no way of escape except by a perforation. With the symptoms presented in this case no one could or would have suspected so serious a condition of the appendix.

CASE II.—Miss E., age 14, consulted me June 19, 1898. History of the case: six months prior had an attack of cramp colic that lasted four or five hours, after which she felt as well as usual for about three months, when she has another attack of colic that troubled her for perhaps a half a day, after which she remained well up to two or three days before consulting me, when she again had trouble with her bowels. At the time I saw her there was rigidity of muscles and tenderness over region of appendix, but not as much as I have seen in some milder cases. Her bowels were loose, no fever, pulse 80, appetite good, but had been on a restricted diet for a day or two. I confirmed the diagnosis of appendicitis which had previously been made and advised an operation, to which she and her parents consented, but thought they would postpone it until after the Fourth of July so that she could attend the fireworks. I advised against a postponement, not that I thought there would be any danger, but because I believe in doing a thing at once after I make up my mind that it should be done. She went to the hospital and was operated upon June 21, 1898; recovered and went home July 1. The appendix was highly congested, of a dark red color, much enlarged and contained nearly half an ounce of pus. There was atresia of its lumen near the cæcum; at one point the wall between pus and the peritoneal cavity was as thin as tissue paper. I am satisfied that perforation would have taken place in a very few more days with all its consequences.

CASE III.—Age 28, occupation, a moulder, consulted me September 28, 1898. Said that he had been having pain in right side, more or less, for six months, but had continued his work. Sometimes he would have to lay off two or three days on account of pain, but after keeping quiet for that length of time, resumed his work. At the time of examination there was only slight tenderness over McBurne's point with no rigidity of the muscles of the abdomen, no fever, appetite fair and bowels regular, diagnosed appendicitis and advised an operation. He went to the hospital and was operated on October first; recovered in usual length of time. Appendix six inches long and three times its normal diameter, red and highly congested, all the veins over the cæcum as well as those supplying the appendix were greatly enlarged, the lumen of the appendix contained pus and soft faecal matter clear down to its tip end, the whole inner surface of lumen was ulcerated and suppurating.

I could report a number more similar cases, but these will suffice. They and similar cases demonstrate to me the utter impossibility to determine the exact conditions of the appendix in all cases by the symptoms. The gravest conditions may be impending with no equally grave symptoms present to indicate them.

It is not always that a surgeon is called before perforation has taken place, after which it requires careful consideration before deciding what to do. If the perforation is recent or the disease is progressing, as indicated by the symptoms, operate at once; but, if, on the other hand, it has been twenty-four or forty-eight hours after perforation has taken place and the condition of the patient would lead us to believe that peritonitis is not progressing, which is indicated by a stationary temperature, pulse remaining tolerably good, with no rapid distension of abdomen, under those circumstances I should reason that the perforation, or leak, that caused peritonitis, had been arrested by nature and that it would be best not to disturb what she had done. By so doing, you take chances of reinfecting the peritoneal cavity during the operation. Under those conditions I would not advise an immediate operation, but would trust to nature. Again, if I was not called until the patient's vitality was so exhausted that he would probably succumb to the shock of the operation, I would not operate.

In conclusion: operate in all cases seen before perforation, even though they are ever so mild; operate in all cases that are seen after perforation, unless symptoms are present to lead one to believe that nature has closed the leak, or the patient is in such a state of collapse that he would be likely to succumb to the shock of the operation.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Chicago, Ill., October 3-6, 1899.

VESICO-RECTAL ANASTOMOSIS.

JACOB FRANK, M.D.

Surgeon to the German Hospital, Consulting Surgeon and Gynecologist of the St. Elizabeth's Hospital and Home of the Jewish Orphans, etc.

Mr. PRESIDENT, Ladies and Gentlemen of the Mississippi Valley Medical Association: A series of experiments have been conducted on the implantation of the ureters into the rectum, sufficient in number to justify the following conclusion, namely:

That in every instance there is an ascending infection of the ureters which terminates in the kidney. Since this is a proven fact, as verified by both a microscopical and macroscopical study of the operated dogs, I have every reason to believe that no better result could be attained in the human being, and from this circumstance alone the implantation of one or both ureters can never become popular. Various operators have devised different methods for the relief of extrophy of the bladder, but Maydl's is to be preferred as the safest and best because, according to his technic, the ureteral openings are not anatomically interfered with, hence a fortification against ascending infection.

Why should the ureters be cut away from a healthy bladder when it is possible for the viscus to be left almost untouched, and still accomplish the desired results? As some of the lower animals and birds have the bladder and rectum as one cloaca, the question arose, why cannot human beings live comfortably in the same condition? It is my object to place the unfortunate individual requiring this operation in the embryological state, by combining the bladder and rectum into one common receptacle, from which the feces and the urine pass.

For the operation which I am about to describe, I have been unable to find any literature up to date upon this subject. However, should any gentleman present be acquainted with any literature upon vesico-rectal anastomosis, I shall be thankful to be informed of it.

The operation consists of anastomosing the bladder to the rectum with my decalcified bone coupler, a description of which can be found in the Medical Record, October 3rd, 1896, the Journal of the American Medical Association, June 19th, 1897, and in Medicine, January, 1897. The technic is as follows: In a male dog the incision is made in the groin, and in a bitch in the median line. Generally the bladder is found distended, and is emptied by squeezing it gently with the hand, when the urine escapes through the natural channel. The rectum is next picked up and freed of its contents, as in any intestinal operation. The bladder and rectum are then brought forward and placed in position for anastomosis. Two or three interrupted Lembert sutures are now taken about half an inch below the lower ends of the incisions determined upon in the bladder and rectum, care being exercised in selecting them that the coupler, when it is inserted, will not encroach upon the ureteral openings. A longitudinal incision is then made in the bladder large enough for the coupler selected, and a puckering string applied over and over the cut margin. The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. The operator now slips the coupler into the bladder opening, at the same time gently spreading the colars apart, while an assistant makes one knot and draws down on the puckering string until the rubber tubing is felt. Another knot is made and the ligature cut off short. The other half of the coupler is then slipped into the rectal opening and likewise tied and cut off. Several interrupted Lembert sutures are taken around the borders to make the work more secure. The operation is very simple and can be accomplished in ten or fifteen minutes.

The opportunity of trying this new method on the human being has not been afforded me to date, although it was tried on the cadaver and the technic carried out nicely. Of the 15 dogs which were operated upon, 10 recovered, and 5 died. In

the first two experiments the technic was not yet perfected, and a great deal of unnecessary work was done, which undoubtedly contributed largely to the failures. As a rule, the dogs are quite sick for the first few days, and show signs of pain, with rise of temperature. For a week after the operation urine and feces are avoided oftener than after this period. Dogs hoist their legs as though in the act of urinating, without accomplishing anything, and finally squat down and micturate from the rectum. The animals that have been kept accustomed themselves to their condition and urinate periodically. The feces were always passed in a liquid form, being softened by the urine.

It is my opinion that vesico-rectal anastomosis will not only become popular for extrophy, but will be resorted to for other diseased conditions of the bladder, especially where a suprapubic or perineal section is merely performed for temporary relief. I predict that in the near future the journals will record cases of vesico-rectal anastomosis in far greater numbers than gastro-enterostomy performed as a relief measure for a diseased condition of the stomach. The field for vesico-rectal anastomosis is much larger than that for gastro-enterostomy, and the results of the former operation will be more permanent than those of the latter. One great advantage that the human being will have over the lower animal is in irrigation, as the operated parts can be kept clean with antiseptic solutions at will, thus limiting the unavoidable, but only temporary, cystitis. Another point is that the human being is kept quiet on his back after the operation, hence feces are less liable to get into the bladder. The reverse is true in dogs. In extrophy of the bladder the anastomosis should be made first, and then the plastic operation later.

Two of the dogs which were operated about six months ago are alive, in good health, and apparently as happy as other dogs that urinate through the natural channel.

The result of the microscopical and bacteriological study of vesico-rectal anastomosis is much more gratifying than that of implantation of the ureters into the rectum. The detailed account of each experiment has been omitted, as time would not permit the reading of it before this meeting. It will be published later, when the last dog is killed.

Dr. Maximilian Herzog, Professor of Pathology in the Chicago Policlinic, has made for me a number of post-mortem ex-

aminations, including a bacteriological and histological study of the material obtained from several of the dogs operated upon by the above described method. He furnishes for this paper a short abstract of his detailed report, as follows:

The dogs were killed by chloroform narcosis at varying intervals after the operation. The body of the animal, as soon as life was extinct, was opened by a long median incision in which the scar in the abdominal wall was avoided. The kidneys were then carefully, with as little manipulation as possible, freed and lifted out. The ureters were ligated close to the pelvis. The outside of the latter was rendered aseptic by a heated spatula, an extra strong platinum loop heated to a red hot state was then pushed into the pelvis, kept there a few seconds and withdrawn. Inoculations from the fluid and juices so obtained were made on blood serum and glycerine agar tubes, which were subsequently kept in the brood oven. Tissues from the kidneys and the site of the anastomosis were fixed in a four per cent formalin solution, or in Zenker's fluid, embedded and stained according to various methods, including, of course, such for demonstrating bacteria.

Dog No. 4.—Operated May 6th, 1899. Killed May 21st, 1899. Four cultures made, three remained sterile. One culture tube developed a growth, evidently an accidental contamination, neither the colon bacillus nor a staphylococcus. All internal organs normal. Anastomosis complete. Kidney tissue normal, no evidence of inflammation or degeneration.

Dog. No. 8.—Dog found dead May 21st, four days after the operation. Internal organs normal except large struma colloidæa. Macroscopic condition of kidneys, ureters and bladder does not point to a cause of death as a direct consequence of the operation.

Dog No. 9.—Operated May 21st, 1899. Developing several days after a paraphimosis and gangrene of the penis. Was found dead June 9th, 1899. Kidney, ureters and bladder show macroscopically no marked changes. All other internal organs normal. Anastomosis complete and firm. Microscopically, kidneys normal except as to one point. There was found in the medullary portion of the right kidney, near the pelvis, two small foci of round-cell infiltration. Bacteria are not demonstrable anywhere in the renal tissues.

Dog No. 13.—Operated on June 1st, 1899; killed June 28th,

1899. Two culture tubes developed colon bacilli and diplococci. Kidneys and ureters macroscopically normal. Anastomosis complete and firm. Microscopical examination of the anastomosis shows that the intestinal epithelium has for a short distance grown over the surface of the bladder. Kidney tissue shows no appreciable histologic changes. There are, however, found a few micro-organisms as follows: Right kidney, in the tissue near the surface of the pelvis, bacilli and a few diplococci; likewise in the cortex a few bacilli. Left kidney in medulla and cortex, a few bacilli.

Dog No. 15.—Operated on June 10th, 1899; killed three months later, September 11th, 1899. Dog suffering from the red mange, but appears otherwise well. Right kidney and ureter normal. Left kidney congested, ureter enlarged to double its normal size. Anastomosis complete and firm, on one side of it are found adhesions of omentum and a loop of small intestine. Culture tubes develop colon bacilli. Microscopic examination of tissue shows a very intimate union at the site of anastomosis, with practically no connective tissue scar, the muscularis and that of the bladder being in the closest apposition. The tissue of both kidneys shows inflammatory changes and contains colon bacilli.

A uniformly striking feature of the histologic examination in all cases is the very complete and firm union of the vesical and rectal tissue at the site of the anastomosis.

From the above, it will be noted that in only one experiment, No. 15, was there any macroscopical evidence of a change from the normal. If, then, the careful microscopical work had not been carried out in my series of experiments, a complete recovery could be claimed in every instance, so far as the behavior of the dog prior to the post-mortem, and to the appearance of the organs at the time of the post, with but the exception already noted in experiment No. 15. I again repeat, that in all my experiments of ureteral implantation an infection of the kidney resulted, and this fact led me to advise the new operation.

From all the literature which I have been able to study on the subject of ureteral implantation, few contain a microscopical report, and therefore are absolutely worthless as regards the subject of kidney infection.

From the report just finished, two points will be observed:

First, that the recovery of the dog and the microscopical appearance of the tissues does not necessarily signify absence of infection; second, in the dogs killed thus far the operation of vesico-rectal anastomosis can be performed without a resulting kidney infection.

Chicago, Ill.

MODERN SURGICAL TREATMENT OF HEMORRHOIDS.

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THE many methods recommended in literature for the relief of hemorrhoids show that either none of them is perfect, or that one method does not fit all cases.

It must not be forgotten that no treatment is scientific or rational if not based on the etiology of a given case, and that these vary in various individuals.

The simple diagnosis, "hemorrhoidal tumors," says little if anything when a method of treatment is to be decided upon. As is well known, the clinical picture of each case, the number and size of the tumors and their location are all features with which the physician or surgeon must become familiar ere he can decide how to proceed therapeutically.

An exhaustive scientific study of the etiology and pathology of hemorrhoids would require volumes, and as I am sure that it is not *terra incognita* to most members of the medical profession, a few remarks will have to suffice.

Modern pathology teaches that there can be no inflammation without germ infection. That seems to be a surgical axiom and certainly we have no right to decry this theory, which could be disproved only by careful experimental research, something that, to my knowledge at least, has not been done so far. Since a hemorrhoidal tumor is but the result of inflammatory process, germ infection must be the main etiologic factor.

A locus minor resistentiae is produced by certain mechanical influences, which, however, in the light of modern pathology can be considered only as predisposing causes. In this class belong: straining during defecation, obstruction of the portal ves-

sels from liver disease and abdominal tumors, pressure produced by gravid uterus, pressure on the veins from impacted feces, etc.

On the whole, however, our knowledge of the causes of piles is very meager, and it seems to me that pathologists will find here a rich field for investigation. That germs are primary factors in the production of hemorrhoids, I am satisfied from a simple observation in my practice, namely:—When I see a case of incipient piles, that is to say, when tumors have not yet become so large as to resist local measures, non-surgical in character, with a view of producing retrogression, the application of suitable antiseptics have in most cases produced a complete cure after ten or twelve days' treatment. In such cases, I am in the habit of irrigating the entire rectum with a hot two per cent solution of antinosine once a day, and to leave a tampon of cotton saturated with glycozone for several hours every day. In such cases I never practice dilatation, for in eighteen cases of complete dilatation under chloroform anesthesia not one cure resulted, the patient complaining of "piles" weeks after the operation, just as much as before.

Eighteen failures led me to the belief that dilatation is of no value whatever even in small piles, no matter whether internal or external. I would recommend in such cases that the local treatment with good but non-toxic antiseptics be given a fair trial. It is hardly necessary for me to mention that attention must also be paid to the possible removal of mechanical disturbing influences.

When we are called upon to treat larger tumors, no matter whether external or internal, we must know what method of operation to employ. There are several of them. One thing is certain, and that is, the tumors must be removed. This, however, cannot be accomplished in a manner so frequently practiced for the removal of a polypus of the nose, for instance where simple cutting off or twisting suffices. Were we to adopt the same simple method for the removal of hemorrhoids, the extirpation of these growths would be followed by a number of unpleasant symptoms, if not by contraction and stricture of the rectal walls.

The patients, for reasons unknown to me, seem to have a horror for operations of the rectum, which explains why quacks, advertising to cure piles without a knife are doing such a large

business. Little do the patients know how they are victimized, and how even their lives are subject to danger. I refer to the treatment that is popularly known as the injection method, that is to say, escharotic solutions are injected into the tumors by means of a hypodermic syringe and the tumors made to disappear by a process of sloughing. It cannot be denied that a good many cures have been accomplished by this method, but it must also be remembered that such accidents, if accidents they can be called, as phlebitis, ulceration and fistula, may make the patient worse than before, while thrombosis, which indeed is very apt to occur, kills and has killed a good many.

To risk the patient's life for the sake of a small fee, no true surgeon will undertake. Popular opinion is in favor of this method, but today the "specialist for chills" is preferred to the scientific practitioner, the "herb doctor" to the surgeon. I also know that the injection method is not always followed by permanent results, the tumors under certain conditions growing again.

I was, not long ago, consulted by a very prominent clergyman of New York, who has undergone a good many treatments by the injection method, and who has to go back again. The suggestion to have his tumors removed with a ligature was rejected as being an operation, all arguments proving of no avail; but rectal surgeons are in this respect no less fortunate than gynecologists, women preferring to idle away time, sometimes precious time, with electric treatments, pessaries and applications, whatever they may mean, when a simple operation like curettage would relieve them of their suffering.

In the earlier years of my professional career, I was in the habit of removing internal and external hemorrhoids with the ecraseur. It was one of my favorite operations for a long time, because of the easy way it could be executed. My objection at present to this method can be framed in the following:—

1.—The wire of the instrument is very apt to break, leaving the operator in a dilemma, especially when the operation is half done.

2.—The cut surface is neither accurate, even, nor can it be regulated. No matter how close we keep the wires down to the base, it is the ecraseur which cuts as it pleases, not as we want it.

3.—It frequently happens that after the operation is com-

pleted, complete separation of the tissues does not take place, and if the screw is tightened some tissue is drawn into the stem, and if continued the stem is apt to bore itself into the rectal wall. Personally, I leave the ecraseur now to the laryngologist.

For the operation known as Excision, Mr. Walter Whitehead of Manchester, England, is responsible. Of course, the operation must be styled after the inventor, hence is also known as Whitehead's operation.

On another occasion I said that the desire to gain notoriety drives men to "invent" or "modify" instruments or methods, which are of no importance whatever.

When the modification consists in grasping a needle between the small fingers of both hands, or in tying thrice instead of twice, or in using catgut instead of silk, I would pass over such modifications with a smile; but when one invents a Whitehead operation, it is time to call a halt. Mr. Whitehead reminds me of a Yankee who discovered a new road to Paris, namely to cross the United States from New York to San Francisco, to continue the trip to Japan, thence via China, Russia and Germany to Paris. His operation consists of a radical excision, not only of each hemorrhoidal tumor, but of the entire hemorrhoidal plexus. The operation itself is a bloody one and secondary hemorrhage is always to be feared. It requires a good deal of time to execute it, recovery (union) takes place slowly and to make the cup full it is adapted only to a limited class of tumors.

Whoever wants to enjoy real cutting and butchering should study his method, described in the British Medical Journal (February, 1887). We prefer not to waste any time copying the same, nor is it in accord with the dignity of the subject to pay any attention to the treatment of hemorrhoids with chemical caustics. There remains to be considered but two surgical methods, viz: The treatment with clamp and cautery, and the operation by ligature. Both are comparatively easy operations as far as the technique is concerned. Many eminent surgeons prefer one to the other, but on the whole, opinion is equally divided and only individual experience will be decisive to the individual operator. Personally I am entirely unbiased, but must admit that I have never operated with clamp and cautery. The reasons for this neglect are of a double nature.

First, it is well known that even the best thermo- or galvano-

cautery outfit occasionally refuses to work at moments when mostly needed. My second objection being of an economic nature, the expense for the outfit being very large, an item which, while not strictly scientific, is one seriously considered by surgeons of limited means.

My method of operating for internal hemorrhoids differs but little from the one in vogue with most surgeons. A few days prior to the operation, the patient is treated with mild laxatives. A bath is ordered prior to the operation, and the parts shaven. Two ounces of a ten per cent solution of hydrozone are thrown into the rectum. Nascent oxygen being formed by the contact of the drug with the diseased membrane, I allow the solution to remain while foaming about a minute, and then irrigate the entire rectum with a two per cent solution of antinosine. I have then my field of operation in an aseptic condition. Preparation of instruments and hands is made in the usual manner. In all cases where the surgeon has been attending a septic case or operated on pus, carcinoma or similar affections, it would be advisable to slip over the hands a pair of sterilized rubber gloves.

A good dilator is now introduced to expose the tumors, which can be easily grasped with a volsellum forceps and held by an assistant or nurse. It is better to start with the smaller tumors leaving the largest for the last.

Under no circumstances should the tumor be dissected up at its base, as suggested by Allingham. Where we have to deal with one or two tumors, this procedure might not be followed by ill results, but where there are many together, particularly when the tumors surround the anus like hills in a natural fortification, stricture of the anus has been known to occur.

I don't make any dissection at all, but simply nick with a sharp bistouri, enough around the base of the tumor or sulcus to permit the lodging of a strong silk thread. A straight threaded needle is then passed through the base, the needle removed, and each side tied carefully, so as to produce strangulation of both halves of the tumor. The silk is tied when fitting into the line of incision. Two-thirds of the tumor (from above) is cut off with a sharp straight scissors. The field of operation is again irrigated with a two per cent solution of antinosine, followed by a douche with a normal saline solution. The wounds are dusted with nosophen and the entire left alone, save a pad of gauze placed over the anus and secured by a bandage.

If I have to remove but one tumor of large size, I simply throw around its base a temporary ligature, cut off the entire tumor, and then sew the wound together in the direction of the axis of the rectum with interrupted sutures.

Chicago, Ill.

SOME FEATURES OF HERNIA AND HERNIATED CONDITIONS IN THE FEMALE, ESPECIALLY FEMORAL AND UMBILICAL.

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(Original Abstract.)

WHILE that pathologic state commonly designated "rupture," or hernia, is generally supposed to occur with much greater frequency in the male than in the female sex, nevertheless, as a matter of fact, obvious to any investigator, the *herniated* condition is oftener suffered from in the latter than the former.

It will be my aim here to briefly call attention to certain clinical features peculiar to hernia in the female, to set forth some of the anatomic reasons therefor, and to note what heretofore most of our distinguished authorities on the genesis of hernia have given little or no special attention to, or the manifold and curious phases of.

It may seem singular, but is nevertheless true, that while the literature on hernia is voluminous, nowhere has the writer been able to find a single complete or systematic contribution in which the subject of feminine rupture has been specially considered, and it is furthermore to be regretted that greater care has not been taken in reporting cases and to give the age, the sex or type of the infirmity. Indeed, some of our most noted writers have been remiss in this particular; thereby this otherwise important addition to the subject loses much of its value for statistical purposes.

GENERAL OBSERVATIONS ON CERTAIN PECULIARITIES AND TYPES OF
FEMALE HERNIA, PROPORTIONATE TENDENCY, ETC.

Hernia has been said to occur with four times greater frequency in the male than the female. In a limited sense, this estimate is no doubt correct; if, for example, we consider the infirmity in very young children, and if we eliminate *herniatic* conditions in the female, dependent on physiologic functions, visceral-ectopia of the pelvic organs, and those eventrations which so commonly have followed various breaches through the vagina and abdominal walls in the surgical treatment of pelvic and coelic lesions.

In the female, with advance in years, the tendency to hernia grows; various types, after adult years, making their appearance for the first time. It may be therefore stated, that in adult life, in the ordinary exercise of all the functions, hernia and the hernial conditions are much more general in the weaker sex, the clinical-history, the etiology and evolution of them being quite radically at variance with those in the male.

ESSENTIAL SEXUAL DISTINCTIONS.

INGUINAL:

First.—Inguinal hernia, as a congenital infirmity, is a very frequent lesion in the male infant, usually, however, undergoing spontaneous disappearance during childhood, to quite invariably relapse after maturity; while with him the umbilical, once obliterated, rarely returns.

In the female infant, hernia is seldom seen, except at the umbilicus, which type tends with growth and development to disappear.

Second.—The essential characters of inguinal hernia in the female, present many features quite peculiar and unique; (*a*) in being complicated by cysts in Nuck's canal, (*b*) by sometimes emerging without a serous envelope, (*c*) by the sac containing the female generative organs, (*d*) by these ectopic organs becoming fecundated and supporting the fœtus to term, quite outside the abdomen.

This hernia is the most common in infancy and after middle life. It rarely, if ever, attains the mammoth proportions of the scrotal. For obvious anatomic reasons, no rupture at any stage of life offers as good prospects of radical cure by surgical means.

FEMORAL:

First. The development, the symptomatology, the pathology, morbid anatomy and clinical-history of femoral hernia are distinctly characteristic in the female.

Second.—This is an unusual type in the male, though common in the female adult. But it is very rare in the infant of either sex, seldom appearing until after the sixth year.

Its development may be sudden and its presence masked. It is often incoercible, and when strangulated is more resistant to reduction by taxis, than any other.

Third.—Femoral hernia is most prone to strangulation and gangrenous changes. Sometimes, with the first evidence of it, symptoms of strangulation coincidently appear. This, in these cases, is always attended with grave constitutional disturbances; besides, it appears that its operative mortality is higher than others.

Fourth.—This type of rupture is often attended by gastric, enteric and uterine symptoms; pain in the scrobiculis cordis, the back and loins; dyspepsia; constipation; psycho-neurasthenic manifestation, as depression of spirits, despondency, and general malaise.

UMBILICAL:

First.—Female exomphalos presents an etiology, a pathology and clinical-history which stamps it with an independent individuality of its own. It is one of those infirmities whose pathology is closely allied with organic function and physiologic processes. Its tendency is towards irreducibility, progressive increase in volume, and occasional incarceration, or strangulation. Its attenuated, fragile investment is liable to ulceration, hemorrhage, or rupture.

Second.—Like femoral hernia, the umbilical is not coercible readily to supports, is attended with grave symptoms when strangulated, and difficult of reduction by taxis.

RELATION OF AGE TO FREQUENCY OF HERNIA.

The greater number of herniæ are seen in early infancy, and after adult years; in the former, the inguinal type predominates, though often tending to disappear; in the latter period, in the female, femoral and umbilical, which rarely, if ever, undergoes spontaneous cure.

PREGNANCY AND HERNIA.

Pregnancy plays a most complex rôle in the evolution of ruptures, inducing, simultaneously, the relapse of some, the dispersion of others, and finally, in another large class, very much aggravating the infirmity. It is chiefly responsible for the *herniated* condition, the collapse of the pelvic floor, and the giving way of the abdominal walls. Child-bearing, then, must be regarded as a physiologic state inimical to the normal muscular support of the visceral contents of both the pelvis and the abdomen.

LABOR IN ITS RELATION TO HERNIA AND STRANGULATION.

We have no evidence that the violent muscular contraction attendant on certain difficult labors, is ever *per se*, the immediate cause of hernia of any description; nor that it ever leads to incarceration or strangulation during the parturient act.

TRAUMATIC HERNIA.

Eventrations, though yielding cicatrices, left after operations through the abdominal walls, are more frequently encountered in women, because of the much greater frequency of cœliotomies performed on this sex. These present many features in common with exomphalos.

Vaginal hernia and certain hernial conditions subsequent to vaginal hysterectomy are pathologic states of a very serious character.

ANATOMIC CLASSIFICATION AND CERTAIN ETIOLOGIC FACTORS IN UMBILICAL AND GROIN RUPTURES, ETC.

From the foregoing, it is evident that we may rationally reduce the herniæ of women with two general divisions: *First*, hernia proper—abdominal or pelvic protrusions; and *secondly*, *herniated* conditions, which may be classified chiefly as follows, on an anatomic basis.

First.—Hernia depending essentially on a primary defect of development—(a) inguinal, (b) femoral, (c) umbilical; besides unusual types, as interstitial, intermuscular, obturator, ischiatic, vaginal, etc.

Second.—Traumatic, ventral or vaginal hernia—*post-operative*.

Third.—Hernial condition of the abdominal walls—*post-partum*.

Fourth.—Hernial descent of the pelvic organs—*pathologic* or *traumatic*.

ENVIRONMENT AND MODES OF LIFE.

In consequence of a pre-natal defect in development, modern modes of life, the demands of fashion, violence to physiologic laws, the exercise of physiologic functions, the greater frequency of operative breaches through the abdominal walls, and through the vagina, visceral-ectopia, or displacement, extrusion, or hernia and *herniated* conditions, in old and middle aged women, are much more frequent than in men. Hence it devolves on us in all these cases to first endeavor to prevent the infirmity; and should this fail, then, later, attempt to effect a cure, or provide relief to the afflicted, by obviating the tendency to the dangers of strangulation.

STRANGULATION.

Strangulation is oftener overlooked, or its symptoms misinterpreted in women's ruptures; moreover, Kelotomy for its relief is sometimes attended and followed by special dangers and constitutional states; *e. g.*, as during menstruation or pregnancy.

HERNIAL CONDITIONS.

Atrophic, degenerative conditions of the abdominal walls, with resulting visceral ectopia of the pelvic or abdominal contents, a collapse of the supporting structures of the abdomino-pelvic organs, although in the aged dependent on trophic influence and vascular changes, in the young are primarily induced or greatly aggravated by the child-bearing state.

ANATOMIC PECULIARITIES.

The structural arrangement of visceral ectopia in the female, with certain important exceptions, corresponds with that of the male. These exceptions are explained largely by difference in function; as, for example, in one we have occasional descent of the ovary, the tube, the broad ligament, or even the uterus. The interstitial, the properitoneal and cystic types, appear more frequently from imperfect evolution in development. A glance at the wide difference in the structural architecture of the pelvis and the arrangement of the sexual organs will, in a large measure, explain the wide difference in the anatomic elements of various ruptures in the sexes. An additional study of function, and the purposes of the organs, will shed further light on the destructive etiologic factors brought into operation, in the development of female hernia.

The mesial plane in the abdomen, above the navel portal, is a common site of epigastric hernia in men. At this point, and below it, in child-bearing women, we frequently find umbilical hernia and eventration.

Above the umbilicus, to the ensiform cartilage, is a long, narrow, conical space, its apex pointing downward. This area is protected and supported chiefly by aponeurotic structures. It offers the least resistance at a point corresponding to the insertion of the round ligament of the liver. This area is not subjected to the influence of gravity, and is powerfully protected from within by the overlying walls of the stomach; and hence the reason why voluminous protrusion is not often witnessed here, in the female, except under the influence of contingent forces. These forces are supplied by the protracted pressure of pregnancy and the violent muscular effort of labor.

From the inferior margin of the umbilical aperture to the symphysis pubis, is the linea alba, a tendinous partition, but not a potential space, in the male or non-child-bearing woman; as, in the latter, the inner borders of the recti and pyramidales lie in close contact. But, in the woman advanced in pregnancy, a considerable lateral expansion of the abdominal walls occurs, which widely separates the central muscles, often leaving after labor a broad hiatus, quite uncovered by muscular structure.

Therefore, in consequence of this alteration in the relations of the parts, and not infrequently degenerative structural changes after delivery, the erect attitude of the human body, long standing or severe labor, the *herniated* condition is very prone to follow.

APERTURE HERNIA.

Strictly speaking, the female is wanting in an inguinal canal. The passage and its preliminaries, first studied and described in detail by Anton Nuck, bears but little analogy to the large open tunnel, which transmits the highly specialized and vascular band that connects the testis with the internal structures of the trunk. The round ligament of the uterus is often little more than a rudimentary structure, sometimes so diminutive as to be detected, if at all, with difficulty, external to the conjoined tendon, often incorporated with, and lost in the fibrous strands of the intercolumar fascia; hence the frequent tedious dissection and occasional opening of the peritoneal cavity, while searching for it in Alexander's operation.

The ill-defined slit which it occupies, not being exposed to physiologic expansion, is essentially a sealed portal; its potency always implying anatomic defect. On a close examination of this passage, it will be noted that besides being very narrow, it is also very short and sometimes nearly straight. The fibres of the superjacent muscles everywhere embrace it very closely, even blending with the cellulo-fibrous elements of the crural sheath, a most salutary, provisional resistance against the violent straining of delivery, although this is an anatomic arrangement which greatly augments the dangers of strangulation.

The crural arch, though a crescentic interval of large dimensions, is so closely occupied by muscles and closed in by aponeurotic structures, that it is only at that segment of it occupied by the femoral canal that hernial escape is possible.

At the umbilicus, the band which immediately unites the infant with the mother, we meet with three separate types of hernia at birth, all unquestionably primarily dependent on defect of foetal development.

Vaginal, obturator, ischiatic, lumbar and other unusual varieties of hernia are, in consequence of difference in structure and function, much more frequently witnessed in the female.

PATHOLOGIC CONSIDERATIONS.

The pathology of hernia has yet to be written. When this is better understood we will be enabled possibly to anticipate its surgical therapy, by prophylaxis, by hygienic and constitutional measures.

It cannot be too emphatically stated that hernia is a *disease*, that it is something more than a simple diastasis or ectasia of the supporting structures, with a bulging outward of the viscera, which, essentially, is nothing more than a symptom or a manifestation. A widespread disease, it is too very closely allied to the various phases of varix, but not so general. Like all constitutional maladies, it is observed to be influenced by certain definite laws, in its advent, as heredity, environment, age and various physiologic states.

The first impress of pathologic influence may be transmitted to the foetus *in utero*, or be acquired by it therein. This influence is in abeyance in early childhood, to be later felt with its greatest force at puberty, and as old age is approached; in the female, during maternity and after the menopause. Trophic or vaso-motor

influence is at work in adult life. The nutrition and integrity of the contractile tissues are insidiously undermined, so that *pari passu* with a relaxation, elongation and wasting of the mesenteric stays, the smooth muscle of the intestine prevents evidence of torpor, or want of contractile energy. Finally, the striped muscle in the abdominal walls shares in these pathologic changes, and only awaits a sudden impulse to yield to the *vis-à-tergo*, directing the descending mass in the course of the least resistance.

Rugged, vigorous individuals of firm fibre are not often the subjects of hernia. Pregnancy and delivery by the effects of a protracted and excessive distensile force, acting over large muscular areas, with the violent commotion, over-strain, contusion and laceration of muscular tissue, it would seem must powerfully act as determining factors in those predisposed to the hernial infirmity.

Under normal conditions, however, we have no evidence that child-bearing in any manner influences the advent of the disease of hernia proper.

The more one studies the subject and critically examines this lesion, the more he must be convinced that its evolution in all its phases is dependent on certain fixed laws of pathology, no less important to comprehend than its anatomy, which feature, up to this time, has chiefly engrossed the attention of observers. This fact is particularly potent in the female.

The basic pathologic factors of hernia we may witness in the course of a purely physiologic act. In the preceding stages of labor, and during its progress, where we have an exact prototype of hernial evolution. The vaginal passage and the structures entering into the perineal cleft relax, undergo interstitial changes and permit of a wide dilatation. The fœtus, by gravity, descends in the direction of the least resistance, engages in the outlet, and is sent through, by forces from above. Were it not that promptly after delivery, the normal tone of the tissues is restored and involutional processes lead to quite complete repair, the birth of every infant would be invariably followed by the descending uterus, the bladder, the rectum, and by an extensive displacement of all the abdominal viscera, after varying intervals of time.

The fœtal pedicle divided, the placenta removed, the cause is eliminated when involution processes restore the normal tone and resistance.

In hernia many of the physical features observed here are in operation. In nearly every case of large hernial extension through a passage, we might promise permanent cure, could we only entirely separate it, by its pedicle from the body, as we do the foetus. In omental eventration or descent of the female generative organs, we may do this with success as to curative results in most cases.

The evolution of adult hernia partakes of many of the features of an *inversion* process, like the shedding of the teeth and hair. In early development, the alimentary canal is quite entirely outside the abdominal plates, while late in life, though sometimes early, the various segments of its passage again manifest a tendency to make their way out through the apertures.

If we would trace the initial factors of so-called "rupture," we must commence with foetal development. Here, we will discover the primary state, producing or predisposing to aperture hernia by defective or incomplete development. This is most conspicuous and best demonstrated in male inguinal. In this situation we can partly explain the frequency of ectopia, by the hiatus which is made by the testis, as it leaves the abdomen, when stenotic adhesion about the elements of the funicular process is incomplete; and when this or the testis carries out through the inner ring, a pouch of the parital peritoneum, or a fringe of the omentum.

By processes of the economy, quite alone and unaided, Nature, after birth, makes good these defects in the evolution and growth of the body in a considerable number. But how can we account for inguinal hernia in the female.

Embryology sheds no definite light on this side of the problem. My own theory is, that in both sexes, at some period of foetal life, the ovaries and testis pass out of the abdomen, and then migrate back again; female, congenital, inguinal hernia occurring when the ovary is caught and held outside, by adhesions. The arrangement of the genital organs of the hermaphrodite would go to support this view.

In the cryptorchid and monorchid where there is the so-called "non-descent" of the testis, how can we explain the presence of an inguinal canal, if the testis never emerged through?

The pathology of femoral hernia is exceedingly obscure. The femoral artery's sheath so intimately blends with the pelvic fascia, and the strong, resisting fibres of Poupart's, Gimbernat's and

Hey's ligaments, that the escape of viscera through it is impossible in the normal state. But pathologic changes coincident with the activity of new functions, open the way for it, especially in the female.

It has long been observed that the venous circulation in the extremities is powerfully influenced by the physiologic state in women, both by menstruation, conception, pregnancy and parturition. It has been noted that the presence of femoral hernia is the greatest after puberty is reached, or quite coincident with that epoch in life when the first evidence of varix is manifest. At this period, when the uterine plexus is being periodically engorged, and an extreme degree of venous stasis is common, femoral hernia, generally, for the first time appears.

In the male, ample provision is made for the extreme degree of vascular turgescence, attendant on sexual excitement, by the pampiniform plexus of veins—vessels of a unique, anatomic construction, and in great number—all passing up through the ever widely open inguinal canal. Now, it may be rational to assume that under various conditions, simultaneous with diverse sexual states in the female, the volume of blood discharged by the superficial, external pudic veins into the common saphena, is very large, or that in some manner in consequence of over-distension of the femoral vein, its walls yield to long continued compression, in time leading to the absorption of the septum crurale, this permitting the viscera to insinuate and engage, when nothing further is needed for the complete evolution of a hernia, except violent muscular effort.

Our knowledge of the development of structure at the navel, amply explains the presence of exomphacele, the most aggravated types of which are closely identified with pathologic processes.

The history of the ordinary exomphacele in the female is recurrence, *i. e.*, the primary portal of escape, for the infantile has, during the growth of the body, contracted, and for a time closed, in the male, as a rule to remain permanent, while in the child-bearing woman it is prone to again dilate or yield, when hernia appears.

In labor it is much exposed, if any defect exists. The violent, downward advance of the midriff, in the violent pneumatic compression from above, with the voluminous, heaving uterus, rising and sinking under each contraction, severely strains the navel area, which lies between these two opposing forces.

Umbilical hernia of an aggravated type is very largely dependent on the same pathologic influence as herniated conditions, *viz.*, the mechanical violence of delivery primarily, and ultimately, on trophic interstitial changes involving the muscles and other contractile tissues.

New York City.

FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

FENTON B. TURCK, M.D.

(Original Abstract.)

In a previous communication it was shown that small quantities of hot water (55 C.) introduced into the rectum produced a marked effect upon the heart and general circulation, and especially on the abdominal organs. From these results it was evident that hot water introduced, at the temperature mentioned into the colon, had a greatly beneficial effect upon the abdominal viscera. Air hot or cold forced through a double tube into the colon and allowed to escape, also acts not only as a powerful stimulant to the abdominal viscera but also acts as a species of pneumatic gymnastics of the colon. In the introduction of hot water into the colon, the following technique is adopted: The patient is placed in a dorsal position upon a table especially devised for the purpose which is so adjusted that the hips may be raised or lowered to any desired angle without discomfort. The solution employed is usually a 9 per cent normal salt solution, when therapeutic effect of heat and cold are desired. For other purposes mild antiseptic and medicated solutions may be employed. A soft rubber tube, either single or double, with end and side openings, is introduced into the rectum as far as the sigmoid flexure. At first 200 to 300 CC. of water at a temperature of 50 C. is introduced. This is allowed to return through a tube into a conveniently placed receptacle and the procedure repeated. Every time the water is introduced its temperature is gradually raised until it reaches 55 C.; in all from 3 to 6 litres are needed. The patient is then allowed to evacuate the bowels. After which he

receives similar short treatment with water cooled to 2 C. or 5 C. The amount of water introduced and withdrawn and the duration of the treatment depends upon the character of the case.

For continuous irrigation my double recurrent tube or needle douche has answered the purpose best in the hands of gastro-enterologists like Herschell, Treves, Gillespie and others. By continuous irrigation a somewhat different action is obtainable from that already referred to. It is indicated in impaction, acute gastro-enteritis, and during the early stages of appendicitis. A strict observance of technique judiciously varied in each case gives the best results.

The mucous membrane of the colon like that of the throat seems to be insensible to comparatively high temperature. The sensations within the colon as to heat or cold are not very definite. This may in part be due to the fact that the colon sensation has been so specialized as to faecal pressure as to lose its heat and cold reaction. That the treatment through the colon influences not only the general circulation but also stimulates the nerve actions of the abdominal viscera, and even the cerebral and spinal blood pressure, has long been known. The principle on which stimulant enemata have been employed in opium coma and allied conditions is significant evidence of this. The ano-genital center is notoriously the last to be affected in coma. Numerous instances have been reported where death from opium coma and anæsthesia have been prevented by its stimulation. Furthermore, stimulation of the ganglia in the walls of the intestines cannot fail to produce effect on the spinal and cerebral centers. The increased action of kidneys, liver and other organs after the employment of colonic means, is evidence in this direction. This is furthermore shown by the fact that favorable results depend, not upon the amount of water introduced, but upon the reaction between heat and cold. Large quantities of water introduced at one time are detrimental. Small quantities frequently repeated have markedly beneficial effects.

In colonic treatment by water or air, single or double recurrent tubes may be employed according to the nature of the case. A tube with a single opening at the end is useless, however, for colonic lavage. One designed by him consists of a rubber tube (1 metre long and with a calibre of 23 A or 35 F), tapered at the end to an opening with beveled edges. On either side are

four small perforations opposite to each other in a row. Above this is a large side opening with edges so sunken as to prevent irritation in introducing the tube. The distance from the end of the tube to the uppermost opening is one and three-quarter inches. This tube ensures rapid return of the water injected, and there is no danger of the suction of mucous membrane by siphonage. There is thus less danger of traumatism and of closure of the end of the tube by the mucous membrane or faeces. This tube ensures a more equable distribution of the fluid introduced, and is therefore of special value in topical applications or in introduction of food. The double recurrent tube or "needle douche," previously described, will be found of special value when prolonged irrigation or lavage is desired. It has been found particularly useful in obstruction from whatever cause, by Herschell and others. For the same reason it is of value in appendicitis. The sprinkler at the end has proved useful in colon atony, or where hot or cold water is needed as a spray or needle douche. In some cases a tube capable of passing the sigmoid flexure may be needed. Most tubes, now made, pass only to this flexure but not beyond. The stiff tubes press upon and so bulge the walls as to give the false impression that the tube has passed through the flexure. The flexible tubes coil up and produce the same impression. My colonic sound and irrigator enables the physician to pass round the colon even as far as the caecum. It consists of a double curved metallic tube, about 16 inches in length, so made as to be passed through the sigmoid flexure. The tube not only serves as a channel for the return of fluids injected, but also as a sheath for the introduction of a flexible, hollow, metallic cable. The distal end of the cable is surmounted by an olive-shaped, perforated head. This serves as a guide for passing the sound. As the cable is hollow, it may be employed for colonic distention. This, if secured during the passage of the sound, will ensure further introduction. The position of the cable tip may be determined by palpation, especially if the cable be rotated. Since the cable is metallic it can be employed as an electrode. Food, by this instrument, may be distributed over a wide area. Great objection frequently exists to the introduction of water, especially hot water, into the colon. The hot water produces depression and even collapse at times. Warm water is particularly objection-

able in this particular. Atony of the bowels from this cause, moreover, is very frequent. Distention of the bowels with water subsequently withdrawn, would be of value in bowel gymnastics were it not for the fact that since the water is slow to return and is not compressible, it causes undue distention.

In treatment of the colon the object is, first, when atony exists to secure heat; second, distention; third, contraction, and peristalsis producing gymnastic exercise. For these purposes air often answers better than water. If heat be desired, the air can be heated by passing it from a compressed air tank through a bottle of water heated to the required temperature before passing it into the colon. The method of treatment is useful in atony of the bowels, whether it exist alone or with obstruction or impaction. Compressed air is used with a double tube introduced into the colon. When the colon is distended, air is allowed to escape through the outlet tube. Air at 55 C. reaches as far as the colon. Nebulization of the colon may be employed; any of the nebulizing mixtures adapted to the colon being used.

Reports of experiments and observations of medical and dietetic treatment through the colon were also presented.

Chicago, Ill.

REPORT OF A CASE OF COMPLETE HERNIA OF THE PREGNANT UTERUS.

W. V. ANDERSON, M.D.

(Original Abstract.)

I PRESENT this report, ladies and gentlemen of the Mississippi Valley Medical Association, on account of its being an unique one, so far as I have any knowledge.

On the evening of March 9, 1894, I was called in consultation by Dr. Arne Zetlitz of our city, now of Sioux Falls, S. D. I found him in charge of a large well developed Polish woman, the mother of ten children. She had been in labor for 36 hours, under the care of a widwife, before Dr. Zetlitz was called. We found upon examination that the abdominal muscles had been separated to such an extent that the uterus had passed out between the recti, carrying the aponeurosis in front of it, and now

hung like a great pear suspended by its cervical attachments, the fundus reaching nearly to the knees. The uterus was freely movable and the os was found to be fully dilated. The uterine contractions were good, considering the length of time the woman had been in labor; but the position of the uterus rendered them ineffective: for at each contraction of the uterus the patient would make vigorous effort to help herself, and though the uterus would rise until its long diameter stood at a right angle to the body, yet contraction and shortening of the abdominal muscles instead of assisting the delivery, acted somewhat as a draw-string at the mouth of a pouch, so that the greater the voluntary effort, the more it interfered with expulsion.

We placed her under chloroform, and after inverting the uterus and having it steadied by an assistant, while Dr. Zetlitz attended to the anaesthetic, I applied forceps (the head presenting O. L. A.) and delivered, without difficulty, a girl weighing 7 or 8 pounds. The birth canal was ample, and there was absolutely no cause of dystocia but the herniated uterus and consequent prohibitory effect of the contractions of the abdominal muscles.

LITHIASIS.

JOHN W. BATE, M.D.

(Original Abstract.)

"LITHIASIS is a condition of mal-assimilation. It embraces those disorders of arthritism, which are characterized by the formation of calculi.

The formation of calculi may take place in any receptacle which contains a more or less concentrated fluid secretion. Calculi have been found in the liver, in the gall bladder and in the hepatic ducts, in the kidneys and their appendages—the ureters, the urinary bladder and the urethra, in the pancreas and its ducts, in the salivary glands, in the prostate, in the tonsils, in the vermiform appendix, in the stomach, in the intestines, in the tissues of the body, in the blood vessels, in the nose, in the lachrymal ducts, in the skin and in the lungs.

Lithiasis is chiefly a disorder of adult life, but it may occur at any age. Heredity plays an important part. Excessive eating

and drinking with insufficient exercise, disorders of the nervous system, and all else that retard the process of oxidation, favor lithiasis. In the inherited diathesis, where the cells are incapable of completing oxidation, and in the acquired type, where an insufficient amount of oxygen is obtained, arrested retrograde metamorphosis permits the accumulation in the system of organic acids and other products of mal-assimilation. These products of mal-assimilation, chemical changes in the fluid secretions, the presence of colloid and other foreign material, are the exciting causes of lithiasis.

In cholelithiasis the calculi are chiefly composed of cholesterine, a product of retrograde metamorphosis, which is held in solution in the tissues by lecithin, and in the circulating fluids of the body by the alkaline salts, and the compounds of potassium and sodium with the fatty acids (Lyman).

An excess of organic acids in the system (the acid dyscrasia of Lyman) liberates basic calcium in the system. This basic calcium unites with the fatty and biliary acids to form insoluble salts, thus lessening the alkalinity of the bile and precipitating the cholesterine.

Biliary calculi occur more frequently after the age of thirty-five. Females are affected three times as often as males. Pregnancy and menstruation favor the increase of organic acids in the system; tight lacing causes stagnation of the bile, their sedentary habits lessen oxidation, and osteomalacia, a disease more frequent among females, is attended by the liberation of calcium salts into the circulation. Ninety per cent of females affected have borne children (Naunyn).

The frequency of gall stones with cancer of the gall bladder is probably due to the stagnation of the bile, and the addition of colloid and other foreign material.

The association of biliary lithiasis with the other disorders of arthritism has been generally observed. Nephrolithiasis also occurs most frequently with other maladies of the arthritic diathesis. Renal calculi develop most often in adult life, but are found in the kidneys of both the foetus and the very aged. Males are affected more frequently than females, the proportion in adults being five to one.

The varieties of renal calculi are—the uric acid form, the urate of sodium and ammonium, the lime deposits, the phos-

phate varieties, finally several kinds of calculi made up of cystine, xanthine, indigo, and urostealith.

Uric acid 'gravel' is the most frequent form of nephrolithiasis. If the urine becomes too acid, the tribasic phosphates, which hold uric acid in solution, are converted into acid phosphates, and the uric acid is thus precipitated.

He cited the fact that the products of arrested metamorphosis are again at fault and quoted Lyman to the effect that everything retarding the nutritive processes tends to facilitate the deposit of uric acid within the urinary passages. Pancreatic, salivary, tonsillar, and prostatic calculi are chiefly composed of lime salts, either the carbonate or the phosphate.

These lime salts are put into circulation by an excess of organic acids in the system, and are precipitated from an acid medium into the various alkaline fluids of the body. The vermiform appendix secretes a diastasic, alkaline fluid similar to that of the pancreas; therefore it was probable that calculi found in the appendix are of identical composition and similar formation to those of the pancreas.

The deposit of calculi, in the form of the urate of sodium and the urate of lime, in the various tissues of the gouty individual, are directly due to arrested retrograde metamorphosis.

He quoted Moullin & Loomis to the effect that calculi of the blood vessels are composed of lime and potassium salts, and cholesteroline, fat granules and crystals of fatty acids.

The rarer calculi usually have a nucleus of some foreign material, but Ord and Carter have shown that the presence of a foreign substance has little to do with the real pathology of lithiasis.

Dr. Bate believes lithiasis is dependent upon the systemic condition, and that prophylactic treatment offers hope.

Prophylaxis consists of a limitation in diet to that laid down for the arthritic generally, viz., a diet attended by no accumulation of organic acids in the system. Also such hygienic means as assist oxidation, the use of flannels to prevent sudden chilling, and the selection of a dry climate of even temperature.

Medical treatment in general is the treatment of arthritis.

The alkalies are useful to maintain the normal reaction of the secretions, and the salicylates to promote their fluidity, both assisting in the elimination of the products of retrograde metamorphosis.

Pichi, hydrangea, dioscorea, chionanthus, Java tea, piperazin, polygonum, uva ursae, and olive oil are classed as antilithics. Olive oil and dioscorea had been of most service in his hands in the treatment of biliary lithiasis; piperazin, urotropin and the salicylates had acted best in nephrolithiasis.

He said the use of the salicylates and the alkalies embraced the rational treatment of lithiasis."

MAMMOTH OVARIAN TUMORS.—REPORT OF A CYST WEIGHING 245 POUNDS.

JAMES B. BULLITT, M.D.

(Original Abstract.)

ONLY growths weighing 100 pounds or more have been considered as mammoth tumors. A search through literature has developed reports of 23 such tumors. Brief summaries of these cases are given. The largest of these tumors weighed 202 pounds.

The essayist adds a twenty-fourth case by reporting in detail the case operated on by Dr. A. M. Cartledge, of Louisville, in May, 1897. The tumor sac and contents together weighed 245 pounds. There were a great many adhesions encountered and the operation was prolonged. The woman rallied from the shock and was in good condition at the end of five days when obstruction of the bowel came manifest, the patient dying on the seventh day.

In considering the 24 cases it is observed that 21 cases were operated upon. Of the 15 in which recovery took place the average tumor weight was 129 pounds; while of the 6 in which operation was followed by death the average weight was 181 pounds.

There are manifestly but three methods of dealing with these tumors: 1. Immediate extirpation. 2. Preliminary tapping, followed in a short time by extirpation. 3. Tapping repeated as often as necessary to relieve uncomfortable distension.

To illustrate that life may be long sustained by constant tapping and withdrawal of fluid, the case of Dr. Ap. M. Vance is cited, where the woman was tapped 179 times between the ages of 34 and 80 years, it being computed that in this time 21,480 pounds of fluid were withdrawn.

In so far as any conclusions can be drawn from the study of these 24 cases the following are submitted:—

1. The fatality from such tumors is directly proportioned to the size of the tumor.

2. Extensive adhesions to the parietes and viscera militate against successful operations, but are second in importance to the size of the tumor.

3. Preliminary aspiration followed by extirpation in a few days is apparently no safer than immediate operation.

4. Marsupialization is contraindicated in tumors of mammoth proportions.

5. Successiveappings are sometimes tolerated over a long period of years, but lead ordinarily to exhaustion and death in a comparatively short time—a few years.

6. When death occurs after operation it is most apt to be immediate, within a few hours, as the result of shock. If this first danger is passed safely, the fatal issue is apt to be the result of obstruction of the bowel, especially in those cases where extensive adhesions are present.

“TYPHOID FEVER IN VERY YOUNG CHILDREN, WITH A REPORT OF THREE CASES WITH UN- USUAL COMPLICATIONS.”

E. B. MONTGOMERY, M.D.

(Original Abstract.)

AFTER an extensive review of the literature pertaining to typhoid fever as occurring in infancy and childhood, including a mention of Dr. Stowell's tabulation of 85 cases under three years of age, the author proceeds to detail three cases, two of which happened in his own practice. In the first, an infant of nine months, the meningeal symptoms were so marked as, for the time, to make a diagnosis of tubercular meningitis highly probable. These symptoms began to subside about the 23rd day of the fever, and convalescence was fairly established by the 35th day.

The second patient, a little girl of three and a half years, suffered from the development of double suppurative parotitis about the 25th day of the fever, and aphasia from an earlier period.

The fever persisted for some time after the evacuation and drainage of both abscesses, but convalescence was finally fairly established about the 44th day from the onset of the illness. The literature pertaining to meningitis and parotitis as complications of typhoid fever is considered, and many statistics, showing their comparative infrequency, given. The third case, an unreported case of Dr. C. W. Rook, of Quincy, Ill., occurred in a boy of three years, and was unusual in the development of swelling of submaxillary glands of one side on the 17th day of the fever. Later, this suppurated and the pus was evacuated, and one week following a parotid abscess formed, resulting in the death of the patient on the 33rd day of the illness. The author, in an extensive search of the literature pertaining to typhoid fever, its complications and sequels, was able to find but three other cases detailed in which the submaxillaries became involved in the course of the disease.

Quincy, Ill.

PEPTO-MANGAN ("GUDE") IN THE POST-OPERATIVE TREATMENT OF GYNECOLOGICAL CASES.

ELIZABETH A. RILEY, M.D.

Superintendent of the Woman's Charity Club Hospital, Boston, Mass.

THROUGH the kindness of the M. J. Breitenbach Company, I was enabled this past spring and early summer to employ their Pepto-Mangan ("Gude") in quite a number of surgical cases under my care in the wards of the Woman's Charity Club Hospital in the service of Dr. E. W. Cushing.

The great success of the remedy as a tonic, blood maker and tissue builder prompts me to report the following cases, which are not exceptional, from the hospital records.

CASE I.—Mrs. E. L., age 24, admitted March 6. Diagnosis: retroversion and endometritis. History of pain in left side and lower back whenever she works, since the birth of child five years ago. Catamenia very profuse. Operation March 10. Cervix was mechanically dilated and the endometrium steamed for 30 seconds. She did not wish further operative treatment and was discharged improved March 21. Readmitted April 20. Operation April 26. Tubes and ovaries were found normal. Ventralsuspension was performed. At the time of the operation the heart was rapid and irregular. The administration of Pepto-Mangan was begun on the 27th in dose of a teaspoonful. This was increased to two teaspoonfuls the second day and a tablespoonful the third day, given three times a day after meals. Convalescence was rapid. Heart action quickly steadied. Discharged May 17, well.

CASE II.—Mrs. K. D., age 28, admitted April 8. Diagnosis: bleeding hemorrhoids and some obscure abdominal condition. History of severe pain in right side and lower back. Profuse leucorrhœa. Anaemia was very marked. Second sound of heart was much accentuated. Operation April 12. Cervix was mechanically dilated and endometrium curetted. The abdomen was opened in the median line and varicose veins found in the right broad ligament. These were tied off. Pelvic organs were

otherwise normal. The hemorrhoids were treated by clamp and canterry. Pepto-Mangan was started the second day as in Case I, and increased in the same way. Convalescence was uneventful. Patient's color returned. Discharged May 11, in good condition.

CASE III.—Miss M. M., age 26, admitted April 25. Diagnosis: retroversion and tubo-ovarian abscess. History of profuse metrorrhagia. Has flowed most of the time since March 1. Patient very weak and anaemic. Appetite poor. Constipated. Mucous membranes all pale. Operation April 28. Cervix was first dilated mechanically and the endometrium curetted. Large amounts of tissue were removed. On opening the abdomen both Fallorian tubes were found to be filled with pus and the uterus soft and friable. Ovaries, tubes and the body of the uterus were accordingly removed. As might be expected, the patient was greatly exhausted. Pepto-Mangan was begun in half teaspoonful doses. It was well borne and was soon increased, till at the end of four or five days she was taking full doses after each meal. Convalescence was so rapid that on May 24 she was discharged well.

CASE IV.—Miss C. B. C., age 35, admitted May 1. Diagnosis: ovaritis. History of burning in abdomen and down legs for last two years. Considerable leucorrhœa. Extremely nervous. Appetite poor. Constipated. Sleeps badly. Operation May 3. Left ovary was found prolapsed, enlarged and adherent, and was therefore removed. Pepto-Mangan was given on May 4, in half teaspoonful doses, increasing the succeeding days. Nervousness soon lessened, appetite returned, and convalescence progressed. A stitch abscess retarded matters somewhat, but in spite of that she was discharged July 16, in greatly improved condition. The nervous disturbance was practically gone.

CASE V.—Mrs. M. E. McK., age 27, admitted May 1. Diagnosis: lacerated cervix, endometritis. History of headache and backache, with bearing down pains and leucorrhœa since the birth of her child eight years ago. Eats and sleeps poorly. Bowels are, however, regular. Heart action weak and irregular. Operation May 3. Cervical canal was dilated and the endometrium steamed for forty seconds. Cervix was then repaired. Pepto-Mangan was begun at teaspoonful doses. It was well borne, was rapidly increased and improvement was marked. Patient was discharged May 17, in good condition.

CASE VI.—Miss M. F. C., age 23, admitted May 3. Diagnosis: dysmenorrhœa. History of extreme pain with catamenia, since menstrual life began (at 13), in the centre of the abdomen and also in back and head. Patient's general condition seemed good. Operation May 5. Tubes and ovaries were removed and the uterus fixed to the abdominal wall. Pepto-Mangan was given as soon as practicable. Patient grew better rapidly and was discharged well, May 29.

CASE VII.—Mrs. I. M. K., age 34, admitted May 3. Diagnosis: metrorrhagia. History of pain in back and sides and profuse uterine hemorrhage. Constipated. Sleeps poorly, but eats pretty well. Uterus found retroverted. Operation May 5. Ovaries, tubes and body of uterus removed. Pepto-Mangan was administered on the second day in half teaspoonful doses. As no vomiting ensued, it was increased to full doses. Unfortunately a stitch abscess interfered with an otherwise satisfactory convalescence, and it was June 21 before she was discharged well.

CASE VIII.—Mrs. M. M. I., age 32, admitted May 6. Diagnosis: endometritis. History of hemorrhages following a miscarriage the first week in April. Patient greatly prostrated and very anaemic. Operation May 10. Cervix dilated and endometrium steamed for thirty seconds through Burrage's speculum. Pepto-Mangan was begun on May 14, a half teaspoonful after meals, increased as I have indicated above. No further hemorrhages occurred and patient was discharged May 23, very greatly improved.

The above cases, even thus imperfectly reported, seem to indicate that in this preparation we have a very valuable assistant in the convalescence of operative cases. Especially is this true in those cases which have lost a large amount of blood or which have become nervously exhausted by constant fret of pelvic disease. Capital cases, too, find in this a most excellent tonic, easily borne and assimilated at a time when any medicine, however efficient, must not cause abdominal or gastric irritation.

THERAPEUTIC STUDIES OF THE ANALGESIC ACTION OF HEROIN.

CARL MIRTLE, M.D.

WHEN at the close of January, 1899, I decided to subject Heroin to a therapeutic investigation, only a few reports had appeared on this preparation. These comprised the interesting studies of Professor Dreser, and reports by Drs. Weiss, Strube and Tauszk, all of which were in favor of this product, and especially of its specific influence upon the respiratory organs and its sedative effect upon coughs. In the meanwhile another article by Professor Leo has appeared, which calls attention to the excellent effect of heroin in conditions of dyspnea, and also a paper by Professor Eulenberg, who successfully employed heroin hydrochloride as a substitute for morphine in the form of subcutaneous injections. While most of these reports deal with the action of heroin upon the respiratory organs, the aim of my own investigations has been to study the analgesic qualities of this remedy. The clinical material for my experiments was obtained from the outdoor department of the Maria Theresa Hospital for Women, in Vienna, in which about three thousand patients are treated yearly. In this treatment of outdoor cases I had to dispense with many observations, such as the investigation of the respiratory and cardiac action, as well as of the reflex irritability; but in experiments regarding the analgesic action of a preparation the subjective statements of the patient must always occupy the most prominent place.

One of the commonest methods for the relief of pains in peri- and para-metric inflammations, as well as in diseases of the adnexa, is the application of a tampon soaked in a 10 per cent chloral glycerine solution, a method which was customary at the hospital at the time when I commenced my experiments with heroin. In order to eliminate any psychological element on the part of the patient, and render it unnecessary to make control experiments with the chloral glycerine solution, I employed the heroin as an external application. A solution of heroin in water and

glycerine may be readily prepared by the addition of a few drops of acetic acid, and by slightly heating the fluid over the water-bath. Much more convenient for this purpose is the recently introduced heroin hydrochloride, which is characterized by a ready solubility in water and glycerine. The solution employed consisted of heroin hydrochloride one part, dissolved in distilled water 50 parts, with an addition of glycerine 950 parts. A well saturated vaginal tampon contains from ten to fifteen grams of this solution, that is from 0.01 to 0.15 Gm. heroin. As, however, much of the solution in the tampon is lost, and as part of the remainder is not completely utilized, the amount of heroin that remains effective in this method of application, as compared with the administration per os of 0.005 to 0.01 Gm., is comparatively small. In this method of application heroin was not only well tolerated, being free from any local irritative action—a great advantage over the chloral glycerine application—but also afforded very satisfactory results. In cases of violent pains in recent inflammatory diseases of the adnexa, a solution of 1 to 600, *i.e.*, 0.015 to 0.025 heroin pro tampon completely alleviated the pains without any sequelæ.

In about 50 cases of women treated with tampons medicated with 0.01 to 0.015 heroin for the relief of pains, the latter began to subside in the course of one-quarter to one-half hour, and had completely disappeared at the end of one to one and one-half hours. This favorable effect persisted for 24 to 36 hours, if the tampon was not removed until the following morning, but for a shorter time if it was removed in from 6 to 12 hours after its application. If the tampon was allowed to remain for 24 hours the effect always continued for several hours after its withdrawal; so that the conclusion seems justified that some heroin remained in the tampon, and was absorbed even during the last hour before its removal. It seems, therefore, that of the original dose only a portion is utilized.

After effects never occurred from this method of application and in this dosage, except a slight feeling of lassitude, which appeared in one-quarter of the cases from 4 to 6 hours after the application. Constipation was never observed during the prolonged use of heroin solution, and symptoms never developed after its suspension for a number of days. In general, a solution of 1 to 1000 is sufficient for use in tampons, and all the patients preferred it to the 10 per cent chloral glycerine solution.

The difficulty of a solution of heroin in water, except on addition of acetic acid, led me to employ the drug in the form of suppositories on the assumption that heroin would undergo a gradual solution in the acid vaginal secretion, and would produce a protracted uniform effect. As a matter of fact, in the acid reaction of the vagina, the analgesic action occurred as reliably, although not as promptly, as evinced by a slight lassitude and drowsiness of some of the patients. Only in one case in which there was a neutral or weakly alkaline reaction of the vagina produced by a moderate colpitis, the action of the drug failed to occur, while a tampon containing the same dose alleviated pains for about 36 hours. For vaginal suppositories doses of 0.01 to 0.015 Gm. of heroin or heroin hydrochloride were sufficient, cocoa butter being preferred as a vehicle. For comparative purposes, I also made use of suppositories containing morphine (0.01 to 0.02 Gm.) and codein (0.5 Gm.) in a case of nymphomania, in which 0.1 Gm. morphine had to be given in 24 hours to combat the disease; on the other hand, an injection of 0.02 heroin with a suppository containing 0.01, was equally efficient.

Careful experiments were made in order to determine the largest doses of heroin that could be administered in a vaginal tampon without sequelæ. These showed that the use of 0.05 to 0.08 Gm. was followed 5 to 10 hours after the application by nausea or slight vertigo, but not by actual vomiting. A relief of pain occurred with these larger doses, even in the course of a few minutes. Sequelæ failed to appear if the tampon was removed after 3 to 5 hours, but the pains recurred more rapidly than after the prolonged application of more weakly medicated tampons. Hence, there can hardly be a necessity for employing larger doses than 0.02 Gm. for 24 to 48 hours.

According to my experiments up to the present time this new morphine derivative constitutes a most valuable addition to gynecological therapeutics, because, even in small doses, it manifests a prompt analgesic action of considerable duration, and without sequelæ.—Wiener Klin. Rundschau, No. 25, '99.

EDITORIAL.

CARE OF THE TEETH.

EVERY physician, who has occasion frequently to examine the mouths and throats of children, must have been struck with the average poor condition of those cavities.

First we notice the lips. Very often if the child has other skin trouble we find the herpes, the eczema, the tinea or the impetigo well marked and most troublesome on the lips. Indeed, many times the eruption shows itself no where else. Nor is irritation of the lips due only to the causes indicated. How often they are parched and scaly and even fissured because the child is a mouth breather and the mucous membranes, intended for and fortified against liquids, are subjected to the irritation of moving air, cold, and loaded with dust and germs.

Another source of irritation to the lips and to the entire buccal mucous membrane as well is found in decayed teeth. It is only among the well to do, one might almost say the wealthy, that it is considered at all worth while to preserve the first teeth. By this class, however, it has become a well established fact that the second or permanent teeth are far more likely to be well formed and lasting, if the first have been well cared for.

Would that all mothers could be persuaded to teach their children the daily use of the tooth brush and careful cleaning of the teeth. When this is begun at an early age, the necessity for the assistance of a dentist is largely avoided. Not wholly, however. For as a result of the kinds of food eaten or perhaps of some peculiar diathesis of the individual, certain children secrete large amounts of lime salts which are deposited on teeth in the form of "tartar." Careful daily cleansing will not in all cases entirely prevent this accumulation though it will do much towards it.

In such cases it should be cleaned off by the dentist as often as once a year. Otherwise an opportunity for the action of germs resulting in decay is freely given.

But while we preach this doctrine of prophylaxis, we are called on to treat the conditions due to decay.

All degrees of this neglect are met. Sometimes it is only the "bad breath" due to a single cavity. Far more often there are the unsightly broken, irregular, blackened teeth, the foul breath, the sore lips, tongue, gums and even cheeks adjacent to the decaying teeth. Streptococci delight in just such abodes and start forth on forays into tonsils or ears, up nostrils or down œsophagus or trachea. Staphylococci, too, and all the other bacilli so abundant in the mouth secretions, and useful, may in their turn find here a secure abiding place. Perhaps, too, the dreaded Klebs-Loeffler in some such retreat gains daily added strength, and when the suitable opportunity comes—oh! if one only knew just what that means—makes his attack. We do not know that an extended study of the bacteriological relations of these points has been made. But we do know that the opportunity is here. And we know enough of the action of Nature's laws to feel pretty sure that she does not neglect opportunities of this sort.

Teeth which are decayed should be filled. It is clearly the duty of the physician to give this advice. They need not be filled with gold. But all decayed or decaying matter should be removed from the mouth and the part kept clean.

Do not wait for a severe toothache or a maxillary abscess. There will be enough such cases among those who refuse to accept your advice.

If too far gone to allow filling, the tooth is much better out of the mouth and should of course be extracted.

JOHN G. CLARK.

WHEN, because of ill health, Dr. Charles B. Penrose, last June, resigned his chair of Gynecology at the University of Pennsylvania, there at once arose a spirited contest for the position. It is one of the leading professorships of the Medical Department, its holder being entitled to a seat in the medical faculty, an exclusive body of only eighteen men.

It is therefore a matter of some surprise that so young a man as Dr. John G. Clark has been chosen to fill the place.

Dr. Clark's services have been in demand by two other leading medical schools of the country, both of which offers he declined, to accept the place at Pennsylvania. He is 32 years old,

having been born in Indiana in 1867. He was a student in the arts course at Earlham College, and later at the Ohio Wesleyan University, where he became a member of the Beta Theta Pi Fraternity. He entered the Medical School of the University of Pennsylvania in 1888, graduating as an honor man in the class of 1891. His hospital service has included the Children's and St. Agnes's Hospitals, in this city; the celebrated Bellevue Hospital, of New York, and special work as ward assistant and post-graduate instructor in Johns Hopkins University and hospital. At the latter institution he was associate in gynecology, under the well known Professor Kelly. Dr. Clark has also spent a year and six months in special study, under the leading gynecologists of Leipsig, Prague, Berlin, Vienna, Paris and London. He has only recently taken up his residence in Philadelphia. His recent publication on Sex Determination is receiving general attention from the profession.

We extend to Dr. Clark our hearty congratulations and best wishes.

BOOK REVIEW.

CLAUDE BERNARD. By Michael Foster, M.A., M.D. Published by Longmans, Green & Co., 91 Fifth Avenue, New York City. 1899.

Fortunate indeed have the publishers been to secure for this volume in their "Masters of Medicine" so well known a writer as the famous professor of physiology in the University of Cambridge.

As might be expected he does not write in any commonplace style. Not much space is given to the mere biographical sketch of Bernard. A far truer method is adopted. We are informed at length of the great discoveries of the man, the glycogenic function of the liver and the vaso-motor system. In the same way, though in less detail, the other discoveries of the great physiologist are sketched in a way possible to no one save a great physiologist himself. Dr. Foster's literary style is easy and flowing and the volume seems to us the best yet issued in this excellent series of biographies.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

A FEW ANATOMICAL AND CLINICAL POINTS IN THE EAR OF THE NEW-BORN INFANT.

ARTHUR J. SHAW, M.D.

In writing upon the anatomical side of a paper such as this, it is perhaps easier to write for the knowledge of the specialist, than for the general practitioner. The importance of a minute knowledge and of the relationships of the parts of the ear, is not appreciated, generally, as it should be. Certainly the infant's ear, and from then on to the fully developed ear, is not so accurately portrayed in the text-books as it should be for accurate operative work. It is doubted by me if there is opportunity, as there should be, in any of our large medical schools, for the observation of skulls and ear sections progressively as to age from infancy to adult life. Such a collection, with many ears of the same age, would be of great benefit to the physician.

The diagnosis of diseased conditions are, here, especially difficult sometimes; perhaps the fussing, or the hand applied to the head, is the only external indication of the severe inflammation beginning within. How often does an undiscovered inflammation in an infant's ear escape attention till perhaps a drop of pus is seen coming from it, or a swelling appears behind. How often do the germs and products of inflammation leave the usual route through the membrum or the squamo-mastoid suture, and enter the petro-squamosal suture, to the brain, the latter condition oftentimes being simulated by congestion of the normal connective tissue processes running through the sutures.

Heredity plays only a small but important part in ear affections, as is well shown in the early history of the deaf mutes in the asylums. Yet many of these cases have been shown to be acquired in the first years of life.

Treatment in an infant's ear yields usually a quicker cure than in an adult's; likewise, though the infant organism is very

delicate in comparison with later years, treatment can be made more effective than later on—an ice bag to the head controls a meningeal process better; an antiseptic cleanses the ear more thoroughly. Of course the fact of the good drainage with no maze of mastoid cells is part of the cause of the latter.

In examining an infant's ear, a very small speculum should be used to get a clear view. Warm the speculum and then gently pull the ear downward and out. The use of too large a speculum bothers even the specialist.



FIG. 1.—Temporal bone of the new-born infant, outer view: showing the ossicles in situ. Taken from a specimen of Dr. Bryant's.

The photographs here shown, were taken from preparations made by me at the Harvard Medical School, through the courtesy of Dr. Philip Hammond. Figure 1 was taken from a specimen of Dr. Bryant's. These are, by comparison with the specimens, magnified the very slightest amount.

In the new-born infant's ear most of the meatus is cartilaginous and membranous, the only part of bone being that formed by the tympanic ring.

At birth the temporal bone consists of three distinct parts—above the large squamous, below the petrous, and resting on these the tympanic ring portion. Figures 1 and 3 show well that these are united by delicate sutures that do not unite until two or three years of age, maybe a larger or a shorter time.

The temporal bone viewed externally differs in shape from the adult, mainly in the absence of the mastoid and in the great apparent slant downwards of the petrous portions, in having no external bony canal and in its indistinct markings.



FIG. 2.—Temporal bone of the new-born infant: Inner view. The black in the picture is due to the bone discoloration.

An important part in the growth of the external auditory canal, is that which lies below the linea temporalis, or the horizontal edge extending from the base of the zygoma and separating the squamous and mastoid portion of the temporal bone. Soon after birth this lower portion of the zygoma begins to grow inwards, forming the superior and posterior wall of the auditory canal, the rest of the posterior portion of the canal being formed

by the mastoid portion; the inferior and anterior walls being formed by the tympanic bone.

In figures 1 and 3, the squamo-mastoid suture is observed running from above and behind, downward and forward in a zig-zag course, to a small opening just behind the lower part of the entrance to the tympanum, the stylo-mastoid foramen.

This, as will be seen in figure 3, runs directly over the outer-wall of the antrum low down.



FIG. 3.—New-born infant: The posterior two-thirds (about) of the outer wall of the antrum removed.

This is one of the most important sutures in the child's ear, and often we find traces of it in the adult temporal bone.

To place the zygoma in correct positions, it should be placed horizontally. Immediately below the root of the zygoma is the poorly marked fossa for the lower jaw.

Resting directly around the opening into the middle ear is seen the tympanic ring; it leaves an uncovered area above, or the notch of Rivini. Its inner edge is grooved for the holding of the

membranum. The anterior crus of this lies directly over the delicate Glaserian fissure—figures 5 and 6. This fissure is continuous below with the canal for the tensor-tympani muscle, the only separation between the two latter being a narrow shelf of bone incompletely dividing the cavity.

In the notch (Rivini) there being no groove, the membranum is directly continuous with the periosteum.

The measurement inside the tympanic ring, or the height of



FIG. 4.—New-born infant. Most of the outer wall of the antrum removed—showing its relative size to the tympanum.

the entrance to the tympanum, is 9-10 MM. vertically; the width horizontally is about 8 MM.

An examination externally of the tympanic cavity, figures 1, 3, 4, etc., shows the following differences from the adult: It is considerably deeper, while the bone formation is practically complete but delicate, especially the floor.

The promontory from its most prominent part to the membranum, measures 2 MM.; in the adult the same measurement is 1 M.

Politzer quotes Brunner: The lining membrane of the tympanum of the new-born infant is remarkable for an abundance of vessels, also for great tumefaction of the tissue.

Removal of the malleus in the infant (new-born) shows well the long process of the malleus, which exists in the adult only as a ligament. It arises from the anterior part of the internal rhomboidal surface at the inner side of the neck of the malleus and runs to the Glaserian fissure.

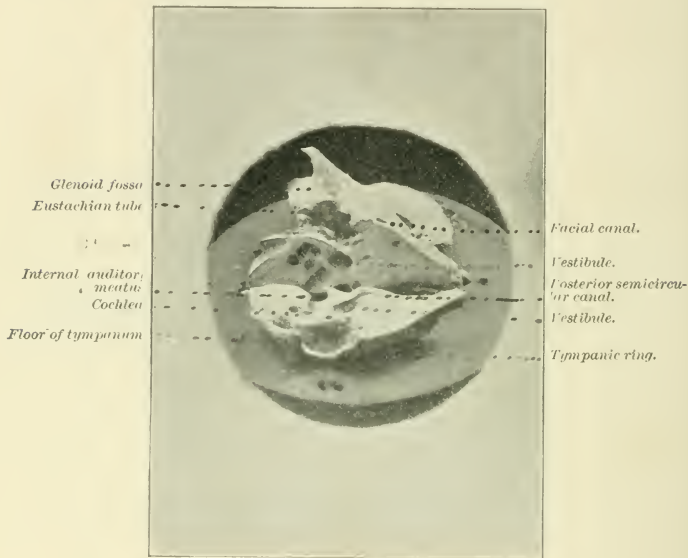


FIG. 5.—New-born infant. Horizontal section through the temporal bone.

The ossicles of the new-born are smaller than the adult, but not so much as one would think, *e.g.*, one measurement of the manubrium, or long process of the malleus, from the short process to the tip is 4 MM.; the same measurement in an adult bone, measured by me, 5 MM. The average difference is perhaps slightly greater than this, but the differences are small.

The antrum is situated well above and behind the tympanum;

this, with the attic, forming one large cavity, after removing the outer wall of the antrum; its cavity is seen to be larger in extent than the tympanum (figures 3 and 4). Horizontal Measurement, measured to a perpendicular from the floor of the antrum over the horizontal semi-circular canal, is about 10 MM.; the vertical measurement externally is about 11 MM.; this becomes narrower as we approach inwards. The horizontal diameter, if the epi-tympanic or attic space is included as it should be, measures about 16 MM. antero-posteriorly, showing the large size of the cavity.

To open the antrum, this high position must be borne in mind.

The best point to open the antrum, is horizontally backward from the zygoma, where this line passes through the squamomastoid suture. If you open the antrum directly backward from the highest point in the notch of Rivini, you would just escape the very thick bone at the lower margin, and it should be borne in mind that the bone of the outer wall of the antrum is very thin. The tendency would be to open too low down (shown well in figure 4).

While in adults in acute suppurative inflammation of the middle ear with involvement of the mastoid, it is necessary to do quite an extensive operation, in very young children the smallest opening usually suffices to effect a cure. This latter remark applies as well to older babies as to the new-born.

In making an incision behind the auricle, it should not extend quite as low as the middle of the entrance to the tympanum, for the facial nerve here comes to the surface, through the stylo-mastoid foramen, and might easily be injured (shown in figure 1, best in figure 3).

The tendency to cell formation that is visible is, in the main, on the posterior, outer and inner walls, with a little on the roof (figure 4).

Zuckerkaudl says, concerning the growth of the mastoid: "Partially by its individual growth, and partially from muscular action in the first years of life, it grows downward, but does not acquire the typical shape of the mastoid process of the adult until the third year. This, although perhaps out of place, is given here to bring out the utility of this infant's anatomy in its application to older children."

The temporal bone looked at from the inner side (figure 2)



Glossierian Fissure.

FIG. 6.—New-born infant—Section through the Eustachian tube—Part of the squamous and petrous bone and tympanic ring laid back: Not very clear.

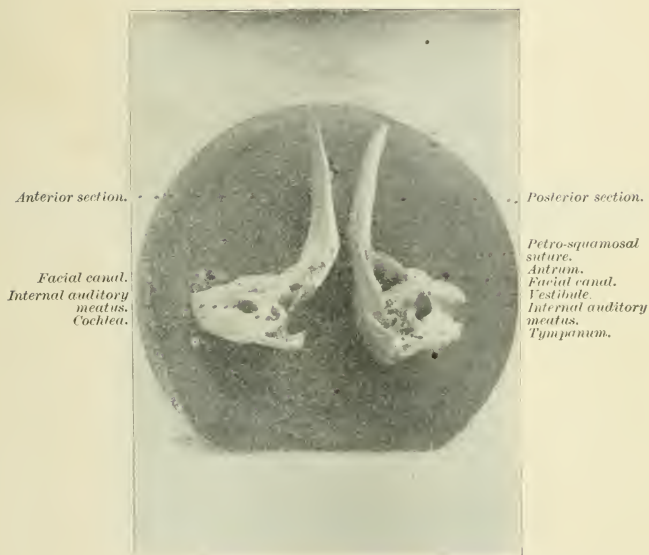


FIG. 7.— Temporal bone of new-born infant. Vertical section through the foramen ovale and the internal auditory meatus.

*External semicircular
canal*
*Posterior semicircular
canal*



*Superior semicircular
canal.*
Foramen ovale.
Cochlea.

FIG. 8.—Outer or tympanic side of the long labyrinth with all its cavities open to view. (New-born infant.)



FIG. 9.—Posterior view of the bony labyrinth of new-born infant, with its canals opened.

shows as the first point of practical interest, the petro-squamosal suture, running directly over the roof of the antrum and tympanum, parallel with the squamous portion, descending and ending anteriorly at the Glaserian fissure. This is of great importance; first, as a suture, and secondly, through all these sutures, run, as mentioned at the beginning, connective tissue processes, communicating with the brain. Posteriorly is seen the slight impression the lateral sinus has yet made on the bone (figure 2).



FIG. 10.—Entire temporal bone and soft parts of the new-born infant — to show especially the relationship of the Eustachian tube and tympanum.

Dr. J. Pollak maintains there is no perceptible difference between the inclination of the membranum in the new-born infant and adult. This is not so. As Politzer says: the inclination of the sulcus tympanicus will, of course, be greater the farther the anterior and inferior walls reach inward, beyond the posterior and superior walls. In the new-born the anterior and inferior walls reach only the very slightest amount further inward than the posterior, so the inclination is not of much importance.

The membranum is thin compared with the adult, and more delicate, but the difference is small, and is drawn in almost as much as the adult at the umbo (figures 10 and 12, especially figure 11).

As to size, it is not so very much smaller than the adult; the greatest diameter in the adult is from the posterior spina tympanica to the lowest point on the inferior wall, which averages, according to Politzer, $9\frac{1}{2}$ to 10 MM. The greatest transverse diame-

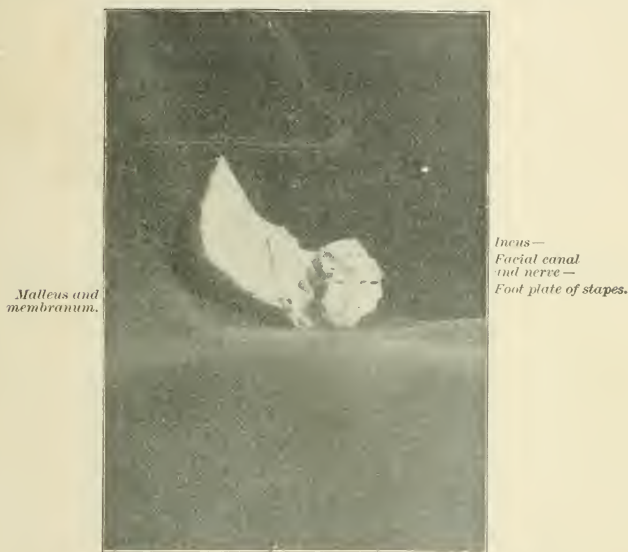


FIG. 11.—The tympanic cavity of the new-born infant exposed by the removal of the anterior, posterior, upper and part of the inner wall. Contents of tympanum not as clear as the preparation. Notice especially the amount that the membranum is drawn in at the umbo.

ter from the anterior to the posterior margin, measures $8\frac{1}{2}$ to 9 MM. Measurements by me in the new-born infants show the greatest diameter, vertically, to be through the short process of the malleus to the lower wall, measuring 9 MM. The greatest horizontal diameter is a little below the short process, and measures $7\frac{1}{2}$ to 8 MM., but the diameters in other directions do not vary much from these.

Hold the section of an adult's ear, with the canal removed to the membranum, beside that of a new-born infant, the difference in size between them appears remarkably small; indeed, as mentioned, it requires accurate observation to distinguish between them (shown in figure 12).

In performing paracentesis in the infant's ear the knife must never hit the inner wall of the tympanum; there is in the quite large number of dried bones, prepared by Dr. Bryant, which I



FIG. 12.— Dissection, showing on the right the drum membrane of the new-born infant, on the left that of an adult. These were not taken on the same level.

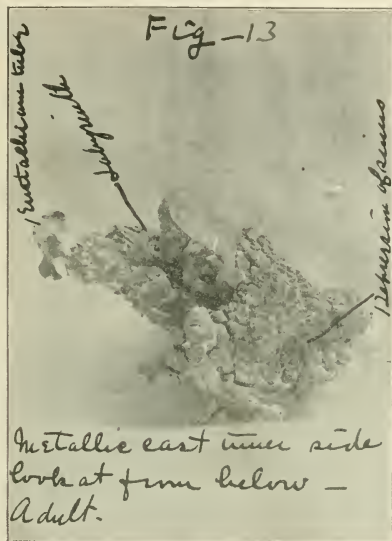
have seen, a complete bony wall, but the round window is quite prominent, facing somewhat outward and backward, and lies directly in the path of the knife point.

The Eustachian tube is only of bone for a short part, about 7 to 8 MM., its full length being 18 to 19 MM. It is shorter and wider than the adult, this being one cause of its easy inflation by Politzer's method. Its pharyngeal opening is a small slit, while

its tympanic opening is large, and its course in relation to the tympanum is more horizontal (shown in figure 10).

Clinically, one must remember the ease with which the solution, in syringing the infant's ear, runs in perforated drums, into the throat.

The accompanying pictures that have not been mentioned in the text, are perhaps explained enough in detail in the printing



Presented in this connection for comparison of size of the internal ear of the new-born infant and adult. These were made of the entire temporal bone showing all its cavities in relation to the ear.

at the foot of each plate; certainly most of them will repay careful study.

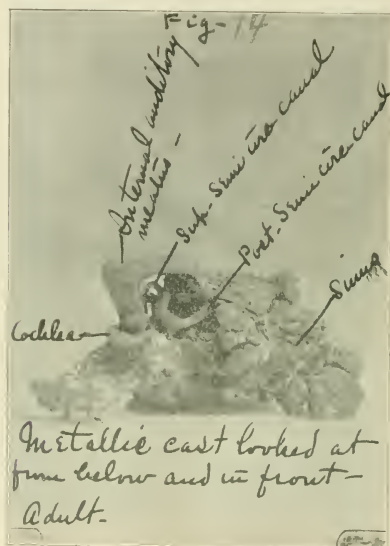
Such photographs as 5 and 7 are quite complicated, but they show many points in the relationship of the internal and middle ears.

Figures 8 and 9 possess rather a scientific than practical interest and will not be entered into.

Figures 13 and 14, two views of an adult temporal bone,

metallic casts, are very clear, and are presented especially to emphasize the slight difference in size of the internal ear of the infant, compared with the adult. Of course slight allowance must be made, one being a cast, the other the whole bone.

Measurements from the most anterior point of the cochlea to the most posterior point in the posterior semi-circular canal in the adult cast is 20 MM.; the same measurement in the infant's labyrinth is 18 MM. The measurement of the widest point



in the superior semi-circular canal of the adult is 6 MM.; the same measurement in the infant is 5 MM.

In conclusion, one to place the labyrinth anatomically in mind must remember that beneath the promontory is the cochlea, that the oval window leads to the vestibule, and that round to the cochlea, and that the horizontal or external semi-circular canal lies just above the facial nerve above the oval window.

Boylston Street, Boston, Mass.

THREE CASES OF PNEUMONIA WITH MARKED ABDOMINAL SYMPTOMS IN CHILDREN.

JOHN LOVETT MORSE, A.M., M.D.,

Assistant Visiting Physician at the City Hospital, and Assistant Physician at the Infants' Hospital, Boston. Assistant in Clinical Medicine, Harvard Medical School.

I.—Michael D., seven years old, went to school on the morning of January twenty-fourth, 1893, perfectly well, as far as known, except that his bowels had not moved for nearly a week. While playing at recess he was struck in the abdomen by one of his playmates. Shortly after he became faint and nauseated, and was sent home by his teacher. He vomited soon after reaching home and continued to do so for twenty-four hours. When seen in the afternoon of the twenty-fifth he complained of nausea, headache and pains in the abdomen. The bowels had not moved. There had been no cough or sore throat. The temperature and pulse were moderately elevated. Nothing special was noticed as regards the respiration. Attention was chiefly directed to the abdomen, which was slightly distended. There was slight general abdominal tenderness, nowhere localized. Routine examination of the lungs, however, was negative. He was ordered calomel and salts and sweet spirits of nitre.

He was seen again the next afternoon, January twenty-sixth. There had been no more vomiting but the bowels had not moved. The abdomen was considerably distended and generally more tender. The tenderness was more marked, however, in the right iliac region, where there was slight dullness but no tumor. The temperature was high, the pulse and respiration rapid. There was constant hacking cough which was evidently painful. Examination of the lungs was again negative. The trouble still seemed to be abdominal, probably appendicitis. Although the rapid respiration and cough were noted they were considered to be secondary to the abdominal disturbance and but little importance was attached to them. More salts was ordered and the abdomen was poulticed!

The bowels moved four times during the night and there was no vomiting. The next morning, January twenty-seventh, there was less abdominal distention. There was still dullness, but very little tenderness in the right iliac region. The cough was much more troublesome and accompanied by pain, which was referred to the right lower chest and umbilicus. The respiration was sixty-five, and painful. Examination of the lungs showed marked dullness, bronchial respiration and a few high-pitched râles over the right lower lobe. The diagnosis of lobar pneumonia with reflex abdominal symptoms was then made.

The distension was entirely gone the next day, although there was still slight tenderness throughout the right half of the abdomen. This also disappeared during the next twenty-four hours. From this time on the case showed nothing of especial interest, the crisis occurring on January thirty-first, the eighth day of the disease.

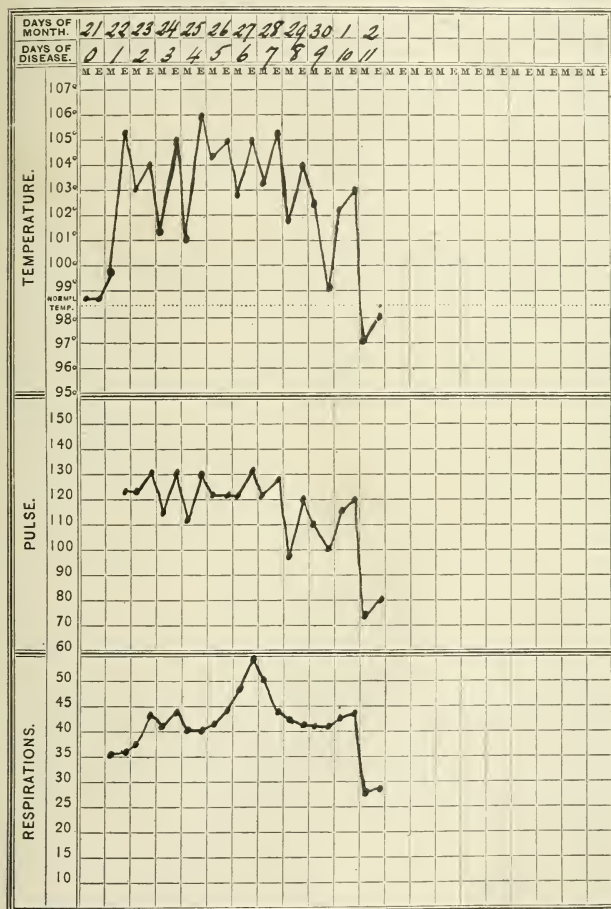
II.—Howard W., eight years old, entered the Massachusetts Charitable Eye and Ear Infirmary April 10, 1899, and was at once operated on by Dr. H. L. Morse for double mastoid inflammation. He bore the operation well and ran a normal temperature until April twenty-second. That morning he had a slight chill, followed by a rise of temperature to 105° . He complained of nothing beyond a slight headache. His face was flushed and the tongue considerably coated. No cause for the temperature was found in the ears. A complete and careful physical examination was entirely negative, except for slight abdominal distention and tenderness. Special attention was paid to the lungs because of the comparatively rapid respiration. As the bowels were constipated he was given a dose of castor oil.

During the night he vomited, and in the morning of the twenty-third the bowels moved scantily. The abdomen was much distended and everywhere tender, but more so in the right half. Careful examination of the lungs showed nothing abnormal, although they were viewed with suspicion on account of a slight cough which had developed.

On the twenty-fourth the abdomen was still distended and tender. There was, however, no localized muscular resistance. The bowels, which were still constipated, were moved by castor oil and high enemata. Examination of the lungs showed nothing abnormal. He was seen in consultation by Dr. S. J. Mixter, who

NAME, *Howard W.*

DISEASE, DATE,



made no diagnosis, but thought that there was no trouble in the abdomen requiring operation.

The symptoms and general condition remained unchanged until the twenty-seventh, the sixth day of the disease. The respiration then became more rapid and painful. The cough increased and was accompanied by much pain in the right chest. Examination then showed the signs of a solidification of the right lower and middle lobes and a friction rub in the lower right chest, back and front. With the appearance of the physical signs in the lungs, cough and painful respiration the abdominal symptoms disappeared and did not return.

The further course of the disease, although severe, was uneventful, the crisis occurring on May first, the tenth day of the disease.

III.—Mamie B., three years old, was taken suddenly sick during the night of May 18, 1899, with fever and pain in the belly. The mother attributed the illness to some potato which she had eaten, and gave her castor oil, which moved the bowels freely. She vomited on the night of the nineteenth. The abdominal pain continued. There was no cough. She was brought to the outpatient department of the Infants' Hospital May twentieth, thirty-six hours after the onset. The temperature was 39.9° C. and the pulse and respiration rapid. A careful and complete physical examination was entirely negative, except for marked evidences of rickets. The lungs were examined especially carefully, because of the acute onset, high temperature and rapid respiration. A provisional diagnosis of acute gastric indigestion was made, and she was ordered calomel and nitre.

She was brought back again May twenty-second, the fourth day of the disease. The bowels had moved freely; there had been no vomiting, and the abdominal pain was gone. She had, however, been coughing for about twelve hours. The temperature was 41.1° C., the respiration seventy and the whole appearance characteristic of pneumonia. Examination of the lungs showed solidification of the left lower lobe. She was referred to the Children's Hospital for admission.

These cases of pneumonia in children beginning with symptoms pointing to the abdomen, while not common, are certainly not very unusual. The predominance of the abdominal symptoms may, however, lead to serious errors in diagnosis. That this

is so, is shown by the fact that within a few years the abdomen has twice been opened in children by well known Boston surgeons for appendicitis when the trouble was lobar pneumonia. These cases are probably most often overlooked because the possibility of their occurrence is not borne in mind and the examination of the chest is neglected. As is shown by the cases detailed above, however, the physical signs of pneumonia may not be recognizable for several days. Yet even in the absence of physical signs the combination of symptoms is usually such as to justify a probable diagnosis of pneumonia. An acute onset with high temperature is always suggestive of pneumonia. If in addition to the acute onset and high temperature the rapidity of the respiration is increased out of proportion to that of the pulse, the combination is almost pathognomonic of pneumonia. This is true even in the absence of cough. Too much importance can hardly be attached to this combination of temperature, pulse and respiration in diagnosis and many errors may be avoided by keeping it constantly in mind. When it is present, vomiting, abdominal pain, constipation, and even distension and tenderness, may usually be regarded as symptoms of secondary importance, probably reflex in origin.

317 Marlboro Street, Boston.

NOTE.

The meeting of the Southern Surgical and Gynecological Association will be held in New Orleans, December the 5th, 6th, and 7th, under the Presidency of Dr. Joseph Taber Johnson, of Washington. Prospects are splendid for successful session. Members of the Medical profession are cordially invited to attend.

BOOK REVIEWS.

ELECTRO-HÆMOSTASIS IN OPERATIVE SURGERY. By Alexander J. C. Skene, M.D., LL.D. Published by D. Appleton and Company, New York City. 1899.

No surgeon of wide experience has escaped the unpleasant experience of failure because of faulty ligatures. New kinds of sutures are constantly proposed, and new methods of rendering them aseptic while not impairing their strength are appearing nearly every week. It has remained for one of our foremost surgeons to take the next step and devise a means of securing hemostasis without ligatures. The electric light, the ray photograph, and to a limited degree the electric cautery, have been of vast assistance to the surgeon. So the theory is not specially new. But its successful adaptation is first found in the instruments here described and their application to all surgical operations described. Hence surgeons everywhere will desire the book and we shall soon learn whether the every day surgeon, as well as the expert specialist, will achieve success in this method.

The illustrations of the various instruments and operations are unusually good. The volume concludes with a well written chapter on Asepsis and Antisepsis in Surgery, that subject about which every surgeon has so many ideas. We may say that those of our author seem sensible and not too complex.

COLPOPERINEORRHAPHY AND THE STRUCTURES INVOLVED. By Byron Robinson, M.D. Published by The Alkaloidal Clinic, Ravenswood Station, Chicago. 1899. Price \$1.50.

If you do not recognize the first word of the title, you will be helped by the subtitle "The Vagina and Perineum and How to Mend Them." That is a subject which interests a large number of physicians who will welcome this reproduction of papers, first printed in the *Journal of the American Medical Association*—a good pledge of their value.

The book is profusely illustrated and all the details of the operations presented. Both of these points are important to the learner. To such students the publishers offer the book to clubs of twelve at 20 per cent discount.

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ORIGINAL COMMUNICATIONS

THE NEUROSES OF THE MENOPAUSE CAUSED BY INTESTINAL FERMENTATION.*

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Neurologist to the Cleveland General Hospital and Dispensary;
Neurologist to Cleveland City Hospital.

GENTLEMEN OF THE UNION MEDICAL SOCIETY: It is not within the scope of this lecture to enter into a consideration of the numerous and complex nervous phenomena which are supposed to be more or less closely related to the menopause. It is desired, however, to invite your attention to some of the neglected elements of etiology of those functional disorders which are apt to complicate this epoch of woman's life.

The inflexible logic of science teaches that we have no derangement of function without a corresponding lesion. In fact we must recollect that even in the normal performance of the functions of life the labor of the organs of the body is not accomplished without a material change taking place, a correlative destruction and reparation.

The remarkable work of Hodge in demonstrating the actual changes which take place in the nuclei and cell body consequent upon normal and over-function has placed us in a position to ob-

*Lecture delivered before the May meeting of the Union Medical Society at Akron, O.

serve and estimate the exact mechanical and chemical effects of nervous activity. Vas has gone farther and shown that mild stimulation of a cell causes an increase in size of both cell and nucleus and an apparent clearing of its centre by the migration of the chromatin bodies toward the periphery. Mann has demonstrated that the increase in the size of the cell is due to the imbibition of the lymph from the space which surrounds it. When the cell is exhausted by over-function it begins to shrivel, first in the nucleus, the chromatin bodies disappearing so that a fatigued cell does not absorb stain like a cell at rest. If anything interferes with the prompt and perfect reparation of the elements which give these evidences of exhaustion in the performance of a physiological function, a disturbed or pathological function takes its place, and we have disease.

Work means wear.

The product of the cell's activity, unless immediately removed, is inimical to its perfect function.

Mosso, in studying the fatigue fever of the Italian soldiers, found that if the blood from a fatigued animal was transfused into the veins of another animal in a state of rest, that the latter soon manifested all the symptoms of fatigue of the former. J. Batty Tuke, of Edinburgh, has confirmed this observation. This is evidence that the condition which we term fatigue is the result of some toxic element which the over-function of the cell has generated. Bouchard observed that the toxicity of the urine was much greater during the waking hours than those of sleep. It follows that long and arduous labor with lack of sufficient rest keeps the tissues bathed with toxic products which well-regulated rest would eliminate. How narrow and arbitrary seems the line between our conceptions of the normal and pathological!

Starr says that the "changes produced by poisoning of the nerve cells are quite comparable with those produced by exhaustion or starvation." That the blood may be charged with toxic agents which have an affinity or selective action on certain nerve structures is evidenced by the action of lead on some of the strands of the musculo-spiral nerve; strychnia on the motor functions of the cord; belladonna on the nervous mechanism of the iris, et cetera. We are aware, also, that imperfect metabolism as instanced by lithemia and like chemico-pathological changes in the tissues and fluids in the body, often produce derangement of function and even changes in the structural integrity of the organs themselves.

Long before the birth of bacteriology, observant clinicians connected many of the diseased conditions of man with the absorption of poisonous substances from the intestinal tract, where, through some fault, they had been formed. The study of germ life and its products has led us to the conclusion that these toxines are the elaborated products of the growth, multiplication and death of these germs within the gastro-intestinal tract. The collective inquiry of able neurologists agrees that within this biochemical laboratory we are to search, in future, for many of the causes of functional and structural nerve disease.

Now I submit that any of these changes in the nerve cell, wrought by exhaustion, by imperfect nutrition or by poisons, whether derived from the uneliminated products of its own activity, or derived from putrefactive fermentations within the intestinal canal, will unfit the cell for the proper nourishment and nervation of the filaments to which it is joined. "That tired feeling," although a byword, is a reality to many that the sleep of any number of hours will not dissipate.

How our subject widens! What vistas open up in the dark avenues of nerve pathology if we turn the lights of recent investigation among their shades! "Who could have foretold from the structure of the brain that wine would derange its functions," was a profound thought of Hippocrates. But had he been acquainted with the physiology of today he would have realized that that great mass of associated nerve tissue, protected as it is by the most wonderful art of nature, cannot withstand the evil of a poisoned and disordered blood current.

The physician-scientist has not been deterred by Bacon, who said, "Beyond a certain point Nature becomes deaf to our questions and no longer gives answer." On the contrary he has carried his chemistry and microscope into her most secret chambers and will soon knock at the very door of life and demand that the great secret be yielded up.

Now a word as to what constitutes the menopause of woman. Without regard to sex the physiology of life is marked by distinct epochs; dentition; pubescence; and the climacteric of age. The first two are developmental, the last, the epoch of degeneration and decay. To woman, Nature has added another, commonly called the change of life, climacteric or menopause. Much discussion has not decided whether this epoch be developmental or degenerative; whether the cessation of menstruation is a con-

servative process of nature to provide for a higher and more stable physical life, or an economic lopping off of a function by the insidious approach of the climacteric of age.

Man reaches the period of highest development at about forty-one years—woman at thirty-nine. The following seven years I have called "*the age or epoch of invigoration*" of both sexes, when all the tissues are most stable and the nutrition of the body is at its best.

Like dentition and pubescence I believe *the menopause to be a physiological process, and not a process of decay*. It has no connection with the climacteric of age but occurs at the first end of that high plane,—"*the age of invigoration*." It is a process of leveling up rather than leveling down; a process of development and *not of decay*. It is incorrect to speak of the menopause as climacteric. The menopause is not a phenomenon of the climacteric of age, but belongs to the age of invigoration, and as such embraces wide and far-reaching changes in the whole organism. *The doctrine that it is sexual and physical decrepitude is misleading, and not founded on fact*. Of the peculiar changes that do take place we are all too willing to profess ignorance, or fall back on the oft-quoted saying of an eminent physiologist, "A woman is a womb with other organs surrounding it." Too long has womankind been treated on this axiom. So long that one of the greatest specialists in female diseases has been forced to exclaim, "Remember that a woman has other organs than a womb."

I ask you to forget that our patient is a woman long enough to consider the changes that take place in the digestive and assimilative organs at this time of life. The spleen becomes smaller; the lymphatic glands waste; Peyer's patches smooth down, and lose their peculiar structure; the intestinal villi shrink and become less vascular; the muscular coats of the intestines atrophy and lessened peristalsis ensues. The tissues become more condensed and the organ more stable as increasing years remove it from the parent cell that gave it life. The organism is more than ever an individual and as such less liable to the accident of external infection.

These are not the degenerations of age, but the blood-supplying, blood-making and blood-elaborating organs of the body have completed the growth of the organism, done their work, and are striking a balance with the needs of the economy. How like a prudent and successful business man, making no new ventures,

desiring no further growth, but cautiously taking care of his accumulations! Not cognizant of the insensible changes going on within the organism, the habits of a lifetime are not abandoned; the groaning organs are plied with more and richer food than ever before, and the weakened and lessened amount of digestive fluids are unable to master the large quantities of food masticated by the finished product of the dentist's art. The absorbents, no longer hungered by a growing organism, refuse to take more than is needed to repair the tissues. The atrophying muscles of the digestive tube are unable to hurry on the mixed products of indigestion and fermentation, and innumerable micro-organisms vigorously flourish, inciting fermentation and elaboration of toxic alkaloids to poison and disorder the functions of life. Constipation, anorexia, eructations, flushes, vertigo, headaches and insomnia are legitimate products of such conditions. Do not charge me with drawing a picture of neurasthenia, the *olla podrida* of neurology, yet how very like the ensemble of symptoms. Man's more active life enables him to escape many of these evils. If he suffers them he is said to have neurasthenia, is ordered to quit work, get himself to the woods and subsist on few loaves and fewer fishes. He comes home and completes the cure by telling fish stories. But woman with her enervating mode of life, lack of outdoor exercise and the worrysome fret of a thousand cares that man wots not of, is gravely informed that she is undergoing the change of life—that mysterious, dreadful, all-pervading, all-suffering epoch of female existence. She is told that she must be calm, and Time, the tomb-builder, will alleviate her sufferings.

Woman's peculiar mental impressionality lends her to this ill advice. From the time of her first menstruation, a woman's mind is monthly exercised over the occurrence, character and peculiarities of her catamenias. When it is considered that the menstrual life of woman is about thirty-two years, we can readily conceive of the powerful influence the occurrence or non-occurrence of the phenomena exercises over the female mind. To this is added both expectancy and fear, as her age warns her that she is approaching that mysterious change. Every morbid impulse of her life is discussed by her friends. She neglects and fails to care for the many aches and disordered functions of the body because she is assured that every symptom (no matter what it may be) must be endured, and that they will all disappear at the "change." Conversation with other women leads her to expect

cancer of the womb or breasts, and tumors of all kinds and degree. She anxiously dwells on every little disorder, so charged is her mind with vague fears, and perchance she consults a wise physician. He experiences great difficulty in convincing her that increased abdominal fat, flatulence, or both, is not a tumor, or that circulatory ataxia and palpitations are not symptoms of fatal heart affection.

This continued introspection, coupled with the peculiar changes in the nutrition of the body at this time of life, renders the nervous system peculiarly impressionable, and liable to hysterical seizures and many other nerve disturbances.

Strange and unaccountable attachments spring up side by side of as unaccountable aversions; ultra religious ideas and Christian science cults find lodgment in the mind, and even liaisons have wrecked the gifted and noble at this time of life. Thought is physiological. Judgment is the result of thought. Any physiological process may become pathological. Pathological thought leads to these unaccountable errors of judgment among women both sane and moral.

The doctrine of critical discharges, perspirations and vicarious hemorrhages at the change of life is the rankest nonsense and belongs to the romantic school of pathology of which Tilt was evidently a high priest.

I desire to call your attention to a few facts which I believe completely refute the widespread notion that the flushes and perspiration result from the retention of a few ounces of menstrual blood, or that they are critical discharges of excessive energy,—an opening up of "the waste gate" to discharge some dynamic force which was hitherto carried off in the functions of menstruation and ovulation. Is it not a fact that these symptoms often occur with great intensity long before the cessation of menstruation; with equal intensity during the severe floodings; are little increased by the final cessation, and often persist ten or fifteen years after the menopause?

How fares the woman who by excessive loss of blood in the "dodging time" or from frequent pregnancies or miscarriages is anæmic? Do these extensive changes which Nature is wont to institute at this time await improvement in her condition? No. She is hurried on to meet them so ill prepared that her deficiency of blood is not readily supplied by the atrophying organs. The blood that she has, lacks both the nutritive and protective proteids,

and is unable to protect her organism against the poisonous substances furnished by a defective metabolism and a rioting gerin-putrefaction within her gastro-intestinal tract. How can an impoverished and toxic blood current keep that great safeguard, the liver, in ceaseless activity? Standing where Nature placed it to guard the portal which poisons pass, every hour of active digestion, it is sufficient to slay the staunchest organism.

Like Stich, we are astounded at the number and violence of the poisons contained in the intestinal canal with so few toxic accidents. We cannot help believing with him that in health the intestinal mucosa is endowed with protective powers which neutralize, modify, destroy, or refuse passage to these poisons.

Twenty years ago Hegar, of Brussels, called attention to the liver as a protective organ and demonstrated that most alkaloids injected into the portal vein lose one-fourth or more of their strength while passing through the liver. Schiff demonstrated the complete destruction of some alkaloids while passing this viscus. C. H. Roger triturated nicotine with fresh liver substance and injected the infusion into an animal without apparent injury. A like amount of the poison triturated with muscle and kidney substance and also alone, promptly killed animals of like kind and weight. This experiment shows that the liver has stored within its substance certain agents which possess the power of neutralizing toxic bodies. Herein lies the reason for the marked difference observed in the effect of an alkaloid given hypodermically instead of by the mouth.

The whole doctrine of immunity rests upon the belief in the presence of some proteid body in the blood which endows the whole system with resistant properties. It has long been known that Eberth's bacillus of typhoid is only found in the blood when the violence of the infection or the lack of proteid protection has allowed the destructive little germ to pass into and multiply in the vital currents of the body. Widal's test proves the accuracy of this reasoning. Serum-therapy is based upon this logic. The interesting phenomena of the terminal infections are to be thought of in this connection. The resistant powers of the system when broken by age or sapped by disease become a ready prey to germs that were ever present though innocuous in the hours of its integrity.

Fatigue, fear, grief, anger,—the whole gamut of human passions seem to weaken the power of these protective agencies of

the body. Napoleon was right when he declared that fear was fatal in the presence of the plague. We are all familiar with the liability that the anxious wife, mother, or sweetheart, will fall an easy victim to the infectious disease of the loved one she is nursing. Not that she loses more rest than a trained nurse who daily cares for such cases with impunity, but the worry coupled with the exhaustion has used up the protectives with which Nature has endowed the vital currents of the body for its preservation.

At the period of the climacteric of woman come many of the great griefs of life and often her hardest labors. Is it strange then, that at this time, when, as has been pointed out, the system is peculiarly susceptible to intestinal infection and is in the press of circumstances both physiological and worldly which are depressing in the extreme, that infection and fermentation of the intestinal tract should take place with all the attendant evils of auto-intoxication?

In this connection I will briefly refer to a case that was a revelation to me. Mrs. W., the wife of a wealthy farmer, and a very refined and educated woman, lost a daughter from rheumatic pericarditis. She had nursed the poor girl seven weeks, allowing no one to aid her. The agonized woman refused to believe that death would come to her child. But it did come, and to the last hour this woman was all strength, supporting and comforting the gasping, clinging form of her earthly idol. As soon as the last sad rites were over she gave up completely and became a prey to every morbid fancy and symptom that a nervous, highly organized woman can manifest. She had been in bed eight weeks when I was called to see her. Her friends were looking forward to her death or mental alienation. It was a distressing clinical picture. Her tongue was covered with a dense, dirty-brown fur; there was no appetite; alternating constipation and diarrhœa; tenderness over the stomach; abdomen distended and tympanic; much complaint of a distressing feeling of emptiness and sinking at the pit of the stomach, accompanied by faintness. She was sleepless, extremely nervous, starting at every sound, and declaring that when she closed her eyes she felt her dead daughter's hand in her own. She experienced most violent attacks of tachycardia, hot, dry flushes, unilateral perspirations, followed by rush of blood to the head; dizzy, faint spells, and a fear of impending death. During her daughter's sickness she missed her

menstruation for the first time. When I was called the third month had passed without its appearance, and all her friends and both her physicians were insisting that she was experiencing a very violent manifestation of the change of life. The urine contained much indican. This fact, associated with the condition of the digestive organs, strengthened the idea that the source of most of the symptoms was to be found in the gastro-intestinal tract. The shock of her daughter's death coming after anxious vigils, at a time of life when her resistance was weakened and the vital protective powers were swept away, she was left to the prey of infections that she had hitherto borne with impunity.

We are all aware that grave digestive disturbances, and even jaundice, may occur from emotional causes. We recall the familiar experiment of Bouchard, proving that the white rat, although immune to certain germ infections, is rendered fatally susceptible if fatigued or subjected to worry and fright. Infection is not alone the chance meeting of man and microbe. The microbe is ever present. The healthy individual has in his blood albuminoid bodies which Hankin termed "protective proteids," and which enable him successfully to cope with the myriads of bacteria which surround him. A healthy man is exposed to cold and is attacked by a violent pneumonia. Is it the cold or the pneumococcus? I think that any fair-minded man will acknowledge that the micrococcus lanceolatus is the specific cause of pneumonia. Yet, according to the observations of Netter, the coccus is found in the buccal secretions of twenty per cent of healthy persons, and Osler states that it is found for months and even years in the saliva of persons who have had pneumonia. Why do these people fail to have pneumonia? Because in health the protective proteids offer a successful resistance to the infection. But a sudden chill is often sufficient to break down these barriers, and we witness an infection by the germ that only yesterday was tolerated with impunity. This is an interesting theme and as wide as the universe. I fear it will not find solution until you and I have long since joined our medical fathers whose errors we inherited.

Let us return to our patient. Milk diet, free calomel purgation, beta-naphthol, bismuth salicylate, vegetable charcoal to attempt intestinal antiseptis, and cold, wet packs with general faradism and massage, set her on the road to recovery. As soon as the intestinal disturbances improved the indican disappeared,

the flushes, perspirations and palpitations grew less frequent, and she returned to her family. Menstruation was at an end, but with careful attention to the intestinal digestion, and measures addressed to invigorating the nervous system, she entered upon the period of life which I have named "the age of invigoration."

Bear with me while I report yet another case. Mrs. Z., a married woman with four children; fairly well-nourished; had been in bed seven weeks. She was referred to me by my friend, Dr. McGee, for severe nervous symptoms. She suffered from severe attacks of tachycardia, flushes and perspirations. She was sleepless at night; dull and sleepy during the day; nervous, fearful, especially fearful of being alone; feared impending death; clung to my hands and with tearful eyes prayed me to cure her. Her tongue was foul, breath fetid, appetite poor, bowels irregular, tympanitic and distended, and she had pains and sinking sensations in the epigastrium. She suffered much from dry flushes, fullness in the head, vertigo and tinnitus aurium. A marked air of excitement pervaded all she did and said. The circulation was slightly above normal, and the urine contained much indican. Menstruation had been absent four months. Baths, calomel purgation, and charcoal, beta-naphthol and bismuth put the woman at her household duties in less than two months. Her age was but thirty years, and her menstrual functions were resumed in four months and have remained regular up to the present time—five years—and she is now in perfect health. I have related this case to illustrate the close resemblance, or rather the identity of intestinal auto-infection and those symptoms which are commonly ascribed to the menopause. What physician of experience has not met with the identical symptoms in the male? Palpitations, flushes, perspirations, fears, peculiar abdominal sensations and even a marked monthly exacerbation in all of these annoying symptoms is not uncommonly met with among men in and about the fifties.

The test of a well-planned attack on the fermenting contents of the sluggish digestive tube will do more to convince you of the correctness of my position than any number of labored periods.

I have tried many drugs supposed to possess antiseptic power in the intestine. I have not expected too much, and hence have not been grievously disappointed by the meager effects obtained with the most of them. The inactive sluggish musculature of the

intestine is most at fault and easiest remedied. Calomel, nuxvomica and saline cathartics by the mouth, and hot water enemas containing salicylate of soda and delivered through the long tube, will do much toward clearing the befouled tract. Massage, electricity, diet and intestinal tonics will aid in keeping it clear. I have long used a combination of beta-naphthol, salicylate of bismuth and vegetable charcoal as the best result of my experience, and careful observation has convinced me that we possess no remedies with wider efficiency as intestinal antiseptics than the ones mentioned.

The weakened digestion should receive careful attention. Malt benefits most of these cases and, when constipation is a feature, I have secured splendid results from a combination of malt and cascara sagrada. The enteric pill of permanganate of potash (salol-coated) has proved of signal benefit in some cases. In those cases with motor insufficiency of the stomach and intestines I have secured splendid results by the administration of one or two teaspoonfuls of the effervescing phosphate of soda in a half pint of hot water two and a half hours after meals.

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SURGERY IN ITS RELATIONS TO THE FEMALE PELVIC ORGANS.*

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A DECIDED reaction has set in against the radical surgery of the female pelvic organs, which was so prevalent a few years ago. We are now told that we operate too often and too radically. We are advised to use more discrimination in the selection of cases for operation and, when we do operate, to stop short of the total ablation of organs and remove only such portions of them as appear to be diseased. Let us see whether we can reach any conclusion how far it is best to carry this modification of the relations of surgery to the female pelvic organs.

That the female pelvis has been the scene of too much operative surgery, is well understood. We have come to recognize

*Read before the New Hampshire Surgical Club, Sept. 28, 1899.

the folly of doing ovariectomies and hysterectomies on normal organs, for the relief of symptoms whose origin is in the central nervous system. The experiment has so often resulted in dismal failure that it is now hard to find an operator who believes that neuralgic, neurasthenic or hysterical symptoms can be relieved by the removal of pelvic organs in which a thorough examination reveals no abnormality. In this respect, conservatism has certainly proved beneficial. Many a woman is now left in undisturbed possession of her ovaries, who, not long ago, would have parted with them only to discover that her health was not in the least benefitted by the operation.

But while recognizing the futility of operating on healthy organs, the existence of pathological conditions which imperatively demand operative interference should not be overlooked. Because an operation on normal pelvic viscera affords no prospect of relief from neurasthenic symptoms, it does not follow that such conditions as salpingitis and cystic degeneration of the ovaries do not need operation, or that they are likely to be permanently cured by local applications and rest in bed. This statement seems trite and superfluous, and yet patients constantly come to us with distended tubes, prolapsed and adherent ovaries and uteri bound firmly into abnormal positions, for which conditions tampons, douches and the recumbent posture have in vain been employed for months or even years. Even then it is not unlikely that the unfortunate patient has been advised by the last doctor whom she consulted, to prolong her sufferings further by giving local treatment a still more extended trial.

If indiscriminate operating has sacrificed a number of healthy ovaries, reluctance to operate has also a heavy responsibility to bear in the shape of the invalidism and misery which it fosters. The dread of "unsexing" a woman seems to exclude all other considerations from the minds of many otherwise excellent practitioners. To a patient already "unsexed" by disease, they would refuse the relief afforded by the removal of the offending organs, as if a woman who is sterile and well were not in better condition than one who is sterile and diseased. To a surgeon who urges the removal of ovaries whose function is destroyed or hopelessly perverted and which are a source of incessant torment to their owner, they address the question, "How should *you* like to be castrated?"; an *argumentum ad hominem* which they seem to consider unanswerable. The fact is, that if a man's

testicles were so diseased as to cause him as much suffering as the ovaries in an operative gynecological case usually cause their owner, he would joyfully hail the relief to be obtained by the removal of such organs, no matter how strongly he might object to parting with healthy ones. Of course no judicious surgeon wants to remove sound organs, but when their function has been destroyed by disease, "unsexing" is out of the question and nothing remains to decide, except whether the patient's sufferings shall be ended by the complete removal of their cause.

In an excellent paper read before the American Gynecological Society last May, Dr. Gordon of Portland makes the point that non-operative conservatism conserves organs, but not health, a result which is not the main object of treatment. The conservatism which is needed in the relations of surgery to the female pelvic organs, is that which conserves or restores the patient's health. The conservatism of organs which have become useless, is a matter of comparative insignificance, and when they have become a source of disease, suffering and danger, true conservatism demands their removal, with a view to the conservation of health and comfort.

Impelled by the desire to avoid "unsexing" their patients, and by the fear of melancholia and other forms of insanity which are the alleged consequences of radical operations upon the female organs of generation, some of the best gynecologists in the country are advocating partial operations,—myomectomy instead of hysterectomy, single instead of double ovariectomy where only one ovary appears to be diseased, and excision of the diseased portions of a tube or ovary instead of complete removal of the organs. It is, of course, desirable to preserve normal tissue and normal functional activity, and the efforts which are being made in this direction are most interesting and praiseworthy. But when functional activity has ceased, or when it is so hopelessly abnormal as to cause torture, it is not worth while to make much of an effort in its behalf. And when, some time after a partial operation, we find the patient complaining of the same old symptoms, which promptly and permanently disappear after the performance of a second and complete operation, we begin to doubt whether the first one was really so conservative as we thought it at the time. It is not intended to convey the idea that partial operations always result in this way, but such results occur often enough to show that there is quite a proportion of cases

in which disease is more extensive than it appears and that in such cases complete removal of the diseased organs is more efficacious than the most skilfully performed partial operation. At the Mary Fletcher Hospital we have had, in the last two years, several cases in which a complete operation has had to be done in order to accomplish the cure which a previous operation had failed to effect. The most striking example of this sort was a patient who, last spring, underwent an elaborate partial operation at the hands of one of the best operators in New York. Beside an endometritis and a lacerated perineum, she had a pair of prolapsed, adherent ovaries, the left one containing a cyst the size of a cherry, the right one several smaller cysts and a little fibroid. Curetting and perineorrhaphy were done; the ovarian adhesions separated, the cyst of the left ovary excised and the wound sewed up, the fibroid removed from the right ovary and the cysts in that organ needled. The patient was only twenty-eight years old and the surgeon wanted to save all he could of the generative organs of so young a woman. The perineum and the abdominal wound healed perfectly and the patient left the hospital in due season, but returned about three months ago, complaining as bitterly as ever of all her old symptoms. Abdominal section showed that the right ovary had become a multilocular cyst as large as a goose-egg, while the left ovary, though not much enlarged, was nothing but a mass of little cysts and was densely adherent to the pelvic wall and to the small intestine. The ovaries and tubes were removed, but the intestinal adhesion was so firm that it could not be separated without injury to the gut. A piece of the ovary, therefore, had to be left adherent to the intestine. Whether this acted as a source of infection, is a question, but peritonitis followed and the patient died in three days. Another case was one in which the patient had been operated on in Montreal and had had both Fallopian tubes and the right ovary removed. About a year afterwards, in February last, she again demanded relief from her old symptoms and I operated on her and found her remaining ovary to be a mass of cysts and connective tissue, about twice the size of the normal organ. It was removed; the patient made a good recovery and called on me a month ago in excellent health. There have been four other cases at the hospital, in which a partial operation was done without cure. The exact result cannot be stated as the patients were unwilling to submit to a second

operation. There are also two cases in each of which I removed one ovary and was obliged to remove the other a year or so later.

It appears from this that there are cases in which we cannot be sure that a partial operation will remove all the disease. Does it therefore follow that partial operations should never be performed? By no means. But in view of the uncertainty of their results, it would seem judicious to perform them only on young women, in whom the preservation of the reproductive function is of the greatest importance. The child-bearing possibilities of a woman whose menopause is a quarter of a century in the future, are entitled to the most careful consideration. Such a patient can afford to experiment and to run the risk of prolonged suffering and a second operation, if there is a fair chance that a partial operation will relieve her and at the same time preserve her reproductive functions. But to the patient who is within a few years of her menopause, the ability to bear children is of comparatively little importance. What she wants above all things is prompt and permanent cure, and the operation which gives the best chance of such a result is the one which extirpates diseased organs, instead of merely removing such portions as appear diseased.

The objections urged against radical operations on such a patient do not seem to me to have much weight. If the reproductive functions are not already practically abolished by disease, the few remaining years of their existence are not worth weighing against the prospect of relief from torment. With regard to the opinion that removal of the ovaries produces a coarseness and general masculinity of voice, form and feature, I can only say, that so far as my own experience goes, no such change occurs in the very large majority of cases. When it does occur, it is only among very young women, never among those who have passed the middle of their fourth decade, and even among young women the frequency and markedness of the change are not nearly so great as is commonly supposed. The question of the causation of insanity by removal of the ovaries, is one on which authorities differ. Personally, I believe that the cases in which such a result is properly attributable to that cause, are very rare. In patients whose minds are already unsettled, ovariectomy may be followed by insanity and so may any other considerable operation. I once did an ovariectomy on an old woman, and a few weeks afterward operated on her husband for strangulated hernia. Both patients

were insane for some time after their operations and then both became perfectly sane. I have occasionally seen melancholia or delusions follow an ovariectomy, done on a person of sound mind, but in every such case the mental health was fully restored within a few months. If the cases of insanity following removal of the uterus or ovaries are carefully analyzed, I think it will be found that, in the large majority of them, the previous mental condition of the patients was such that any other operation of equal magnitude, or indeed any similar shock to the nervous system, would have been followed by insanity.

Partial operations have not yet been done in sufficient numbers, nor for a long enough time, to enable us to draw definite conclusions as to their value. I should like, however, to submit the following propositions for the Society's consideration. They represent opinions which are the result of personal experience and observation, and I shall be glad to know how far they are borne out by the experience and observation of the members present.

I.—In operative cases the best prospect of a complete and speedy restoration to health is afforded by a radical operation.

II.—In the case of a young woman, with most of her child-bearing life before her, it may be justifiable to offer the less reliable aid of a partial operation, in order to give her every chance to preserve the function of reproduction.

III.—In the case of a woman approaching the menopause (and *a fortiori* if she has passed it), there is no valid reason for refusing to give her the benefit of a radical operation.

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SOME PRACTICAL EXPERIENCE IN ASEPSIS AND ANTISEPSIS IN OBSTETRICS.*

DOUGLAS AYRES, M.D.

So much is known at the present time of asepsis and antiseptics and its great value in all surgical procedures that I am frequently led to ask myself the question, "Do I and do the profession generally exercise the same care in technique in obstetrical work that we do in other branches? Do we, when called upon to attend a

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woman in labor, make the same careful preparation, and follow it in the spirit and the letter that we would in the simplest case of minor surgery? Do those especially, who are practicing in our country places, and even those in our larger villages and cities, in the hurry, and with the cares of their active lives, always think to prepare as to their garments and their bodies after attendance upon certain cases—which I will mention later—to their hands and arms, before they begin their work? Even though fully alive to their importance, does not the excitement of the hurried call frequently divert the mind from them? And do they always remember to instruct those who are left in charge of the patient in those attentions that are so necessary for her comfort and safety? It is well, I think, to present this subject at intervals that each of us may offer our own experience in these procedures which are of so much importance to every woman who is about to be delivered of her child.

The vast amount of research and patient work, in the great field of bacteriology, has placed aseptic and antiseptic work in this department upon as scientific a foundation as that of any other in surgery, and with such care as we all know how to exercise, with ordinarily favorable surroundings we have but slight fear of septic inoculation. The late Dr. Lusk found by careful search of the records of the Health Department of New York City for a period of nine years, from 1868 to 1877, that the whole number of deaths was 248,533; that of these, 3,342 were from diseases complicating pregnancy, from accidents of child-bearing or from diseases of the puerperal state; or that one and seventy-five one hundredths of all deaths occurring during that period was the result of what we regard as a normal, natural function. Of these, 1,947 cases were reported of puerperal fever, puerperal peritonitis, metro-peritonitis, phlebitis, pyæmia and septicæmia. He says: "If we apply the general term 'puerperal fever' to this class of cases it will be seen that the malady is the cause of nearly one, one hundred and twenty-seventh of all the deaths occurring in the city. The actual number of births for the nine years was estimated at 284,000; the total number of deaths to the whole number of confinements was in proportion of one and eighty-five hundredths, or from puerperal fever alone in the proportion of one and forty-six thousandths. Max Boehr makes it appear in his statistics that one-thirtieth of all married women in Prussia die in childbed. A

commission appointed by the Berlin Society of Obstetrics and Gynecology reported that from ten to fifteen per cent of the deaths occurring in women during the period of sexual activity was due to childbed fever. These statistics show clearly the importance of close attention to all the conditions that might lead up to and culminate in septic inoculation. In all cases of confinement we should request that the external genitals be washed with soap and water, followed by a solution of corrosive sublimate or carbolic acid. Before examination we should remove the coat, bare the arms, wash hands and arms thoroughly with soap and water, clean the nails and follow with a solution of carbolic acid or bichloride in which hands and arms are immersed. It is always the better plan to make as few examinations as possible to determine fully the presentation and position, and whether labor progresses normally. If it be necessary to use instruments, great care should be taken in making them perfectly sterile; they should be prepared as carefully as we would prepare our instruments for general surgical work. I say this not as an intimation that all of us are not fully up to all that pertains to asepsis and antisepsis, but as a reminder that may serve to keep us in the proper course, to place us upon our guard at all times as to these conditions. Careful washing and sterilization of all instruments as soon as possible after using them is always of importance. If we pack them up hurriedly after we have finished our work and carry them to our offices, it is well to charge the mind with this so that it may be done as soon as the opportunity offers. I find that two sets of Canton flannel or drilling wraps, with tapes fastened upon them to hold the instruments in place, are very convenient for carrying, as one can be laundered while the other is in use. Other garments, also the hair of the head and face should receive careful attention, especially after having been in attendance upon any of the acute infectious diseases, elements from which might by inoculation cause sepsis. We are frequently in attendance upon those sick with the eruptive fevers, especially scarlet fever, upon diphtheria, upon erysipelas, ulcerations of all kinds, and occasionally make a post mortem examination, the latter of which should never be done when an expected case of confinement is near at hand. But if the case is forced upon us, the greatest care as to complete change of garments and thorough sterilization of the body should be taken.

Remembering that labor is a physiological function, sepsis

means fault in procedure, means that poison has been introduced, means that it has been brought about by external means—in a word, nature is not at fault, but the fault rests with the attendants. A physician living a few miles from me came to my office some time since and in the course of our conversation said: "I feel like refusing all cases of confinement for the present, for during the last two months I have had four cases of puerperal fever. I am positively afraid to attend another case." I replied: "There is some fault in your technique, doctor, in your preparations, aseptic and antiseptic, for the work. Have you been very thorough?" "I think I have, but I might have been more so." "Have you no case that you are attending from which you might have carried the infectious elements?" "I do not think of any." "Kindly think over all your cases. Have you any of the eruptive fevers, diphtheria, wounds of any kind or ulcers?" "Nothing of the first; but I have a case of varicose ulcers of the leg—an old lady—I have been in the habit of dressing them every two or three days." "To that case, doctor, I think the origin of your trouble can be attributed. You probably inoculated the first patient by some fault in your procedure and the others from both sources, as a little leaven leaveneth the whole, so the slightest amount of this subtle poison will inoculate a great number. I would advise you not to take another case until you have ceased your attendance upon these and the case mentioned for at least two weeks, then follow a thorough aseptic and antiseptic course for the whole body and change the clothing." He followed my advice and reported that he had no further trouble. But it is not the physician alone. Many of our nurses, especially those in the country, are not trained, and we must train them. We should know who is engaged. If she is not a trained nurse we should find out her occupation and impress upon her the great danger in going to the patient without the most thorough aseptic and antiseptic preparation of her person and clothing. We should place the means in her possession and give her written directions as to their use. Asepsis is not sufficient. We should provide her with antiseptics, and our directions should be to wash and disinfect herself as thoroughly as in the case of ourselves. After our preparation we should be very particular as to our lubricant. The vaseline of the household is a very fruitful source of infection. It may have been used many times by various members of the family and for various infectious sores, and is usually kept open

and is simply a receptacle for micro-organisms, and should be wholly discarded, unless it be a fresh package. Creolin has been very highly recommended and is a very good lubricant and antiseptic. If necessary to catheterize the patient after delivery, a glass catheter may be left with the nurse with the most careful directions as to the proper means of sterilizing it, and the great importance of repeating the process each time before using it. The same antiseptic precautions should be taken after delivery. Keeping the body and external genitals perfectly clean with soap and water and antiseptics, is first in order. Small pads of sterilized cloth may be prepared by the nurse and saturated with the antiseptic placed over the external genitals and held in place with a fillet prepared in the same manner and changed several times daily. I do not advise any form of vaginal douche after a perfectly normal labor, and normal condition of the lochia. It has been quite conclusively proven that the lochia are not particularly septic and that the secretions of the part will protect from any ordinary septic influence, that nature has provided a means in the secretion of these glands of destroying what of bacteria may obtain after a normal labor, that there is, therefore, no indication for the use of the douche.

Recent bacteriologic study has been very close as to the lochia. Döderlin, Winter, Steffel and others have found pathogenic micrococci, especially the staphylococcus albus; and Krönig has found the streptococcus most frequently. It is his opinion that the vagina of every untouched, pregnant woman is aseptic, containing nothing pathogenic, excepting the thrush or gonococcus germ. Gow demonstrated the following statements before the Obstetrical Society of London, January 13, 1894: "The vaginasecretes a whitish and opaque fluid resembling in appearance thick starch-mucilage, the opacity being due to the presence of numerous flat nucleated cells. Chemically the fluid is albuminous in nature and there is no evidence of the presence of mucin; the reaction is acid, but the fluid when secreted is alkaline; the acidity depends upon the presence of bacteria that are not, however, pathogenic." Stroganoff states that the vagina constitutes an unfavorable locality for pathogenic microbes, particularly for the staphylococcus and the streptococcus; the action of the secretion of the habitual (non-pathogenic) vaginal microbes aids in this means of defence of the organism. The cervix, likewise, is unfavorable to the development of the pathogenic microbes, but

the question of the normal vaginal flow is still unanswered. The bacteria that are most commonly found in the vagina are the bacillus vaginæ, which produce the lactic acid of the vaginal secretion and the septic staphylococcus. Menge, in the "Lancet" of April, 1895, reports a series of observations as to the bactericidal properties of the vaginal secretions in non-pregnant women, and has demonstrated the fact that in 44 out of 150 women, there were no pyogenic micro-organisms, either at the fundus or the introitus vaginæ. He next proceeds to investigate the fate of such germs when introduced experimentally. On 35 women he made 23 experiments with bacillus syocyanus, 30 with staphylococcus pyogenes, and 27 with streptococcus. The result was the same in all cases; after a varying period the vagina was found to be free, and the question as to whether the vaginal secretion was acid or alkaline did not affect the result.

I offer the suggestions of this paper for the purpose of keeping this subject before us, that we may continue to improve our technique in the lying-in chamber, that each one of us may instruct carefully in every case those who nurse the patient, and that we may be prepared to give advice to those of our professional brethren who may not be fully convinced of the great importance of these procedures; and by so doing we may save to home and society many a valuable life, and emphasize our worth as physicians, and, above all, have the satisfaction of doing good.

Fort Plain, N. Y.

REPORT OF A CASE OF PUERPERAL SEPSIS AND WHAT IT TEACHES.*

CHARLES H. GLIDDEN, M.D.

THE patient, Mrs. A., was delivered in October, 1897, of a well-developed child weighing ten pounds. Presentation O. L. A. Labor was uneventful and entirely uncomplicated. A drachm of Squibb's F. E. Ergot was given and the placenta was expelled by aid of a moderate amount of expression in about thirty minutes. Good uterine contraction occurred and about an average bleeding

*Presented at the Annual Meeting of the New York State Medical Association, October 24, 1899.

from the placental site. No evidence of retained clots or secundines was noticed at this time nor at any time afterwards.

The patient's health prior to the time of labor seemed excellent. Previous examination had revealed a normal condition of the kidneys and favorable position of the foetus in utero. She was thirty-two years of age, a farmer's wife, and although inured to hard work, it transpired that she had performed an extraordinary amount of labor during the two or three weeks preceding her illness.

Coming of sturdy "Mohawk Dutch" stock, she was possessed of an iron constitution and splendid physical strength, though in stature only of medium size.

On the night of labor, having plenty of leisure time after arrival at the house, it was possible to make careful preparation to secure aseptic conditions. A quantity of water was sterilized and receptacles scrubbed and cleansed for containing it, for hand solutions and for toilet purposes. Plenty of soap and water was used to render examining hand and external genitals of patient clean. No precaution was omitted and more than usual thoroughness was observed in attaining clean conditions preliminary to making the few examinations necessary. Examining hands were frequently soaked in hot bichloride solutions, as were also the external genitals of the patient. Having personally attended to all these matters, in the absence of a nurse, both before, and immediately after labor, any error in technic must be laid at my door.

At this point it may be stated that the sanitary condition of the house and surroundings was much the same as we expect to find in most rural homes. It is briefly though unscientifically described in the following quotation: "God's own people, man's own back door, and the devil's own privy." The sewerage of the kitchen was disposed of in an open box in the corner of that room, discharging its contents into a surface drain outside. The privy vault, connected with the kitchen by a covered passageway, was located close up to the foundation of the house. In other respects the house was arranged as suited the convenience of the builder and not at all for the comfort or health of those who dwelt therein.

On the morning following labor an unskilled and uneducated woman was procured to take charge of my patient, according to the custom still in vogue in country districts. How well she did

her work cannot be stated, nor is it possible to affirm that she is in any way responsible, either by acts of omission or commission, for the results which followed.

The third day, October 12, while on the way to make my last visit, prior to starting for the "97" meeting of this Association, the husband, driving rapidly, met me and stated that his wife was not doing well, which upon investigation proved to be not exaggerated. She had been seized very suddenly that morning with sharp pains in the precordial region, accompanied by dyspnoea, a feeling of suffocation, and a sense of impending death. Her own description of the attack was very graphic and her face still bore the very anxious appearance and pale clammy look as of great fear and decided shock. There had been no rigor or any feeling of chilliness. The temperature was 102° , pulse 120, and respiration accelerated. Further examination revealed a distended abdomen, somewhat offensive and scanty lochial discharge, uterus enlarged and sensitive to touch, but freely movable, its mucous lining roughened, and a dirty discharge followed the examining finger from the os.

Septic infection and endometritis were suspected and means were at once taken to prevent further infection. The cavity of the uterus was thoroughly washed with a solution of bichloride of mercury, one to five thousand, and this repeated at eight-hour intervals. Bowels were immediately purged by calomel and salines. Sustaining and stimulating measures were also adopted at once. After two days all the conditions remaining unchanged, the curette was carefully but thoroughly used, removing nothing but shreds of necrotic tissue. Following this the uterus was washed at four-hour intervals and nourishment, stimulants and heart tonics were pushed to the limit as indicated. Two trained nurses were secured as soon as the severity of the cause became apparent, and a battle royal was waged between the voracious streptococci and the reserve forces of the patient. The temperature ranged from 102° to 106° , pulse and respiration correspondingly high. There was enormous distension of the abdomen and great quantities of gas were discharged per rectum. Busy delirium and marked subsultus were almost constant.

At the end of a week a second curettage was resorted to and this time the sharp curette was employed. Lysol was substituted for the bichloride as an antiseptic and is recommended because of its

lubricating qualities, a matter of some importance in frequent intra-uterine douching. The intervals of douching were again increased to eight hours at this time.

On the eighth day ten c.c. of antistreptococcic serum, obtained from Dr. B. H. Buxton, of this city, was injected hypodermatically with not the slightest effect so far as we could observe. The condition of profound systemic poisoning or pyæmia remained unchanged. No abatement of the unfavorable symptoms resulted, either from the serum or the intra-uterine douchings or the curette. Hope was well nigh abandoned, and indeed it seemed a hopeless case at the end of the second week. As an evidence of the extremely critical condition of the patient at this time, it may be stated that one of the nurses finding that the patient could not swallow, aroused the family in the small hours of the morning and announced to them that there was no hope and advised them to bid her good-bye. (Decidedly reprehensible conduct on the part of the nurse.)

No distinct localized tumefaction of the pelvic tissue had been found up to this time though careful search had been made, but as a desperate chance and without much hope of a favorable issue an incision was made in the cul-de-sac of Douglass, and exploration with the finger far up in the connective tissue behind the uterus. About three ounces of serum, bloody and probably containing some pus, was discharged. This opening was kept patent, and the cavity thus formed, as well as the cavity of the uterus, was washed daily and loosely packed with wicks of gauze. Steady improvement was manifest from this time until convalescence was finally established. Once this new cavity was thoroughly curetted, so persistent were the indications of reinfection.

Six times during her illness full ether anæsthesia was necessary, and much of the time two nurses were required night and day. One of the attending physicians remained eighteen nights at the house and a portion of the days as well, so tremendous seemed the risk and so slight the thread holding her to life. A full quart of whiskey was administered during one day of twenty-four hours, and during all the time from that amount down to half a pint was given each day systematically. Sixty ounces of milk was the daily average amount, varied from time to time by other liquid foods. Temperature and delirium were controlled by the ice cap and cold packs. Strychnia and spartein, digitalis and strophanthus were all made use of at various times, as well as morphia and

hyoseyamin as indicated. On several occasions the excellent effects of large quantities of normal salt solution, injected high into the colon, were observed. The insertion of the long rectal tube for this purpose also served to facilitate the escape of enormous quantities of gas from the greatly distended bowel.

Convalescence was established at about the end of the fourth week. Daily dressings and washing of the sinus were maintained until it closed at about the end of the eighth week. No local ill effects remained. The uterus is freely movable and in other respects health seems to have been fully restored.

The favorable outcome in this case may be attributed:

First—To the sustaining treatment. The administration of alcoholic stimulants can hardly be overdone and the restorative effect of the saline solution given at an opportune moment, is certainly remarkable.

Second—To the excellent nursing. Only the most persistent assiduous and unremitting care will bring success.

Third—Drainage from the genital canal and later from the sinus in the pelvic connective tissue. It is not always possible to find evidence of small accumulations of pus. In the absence of other evident causes for the persistent systemic infection, it is probably good surgery to make an exploratory incision and through it carefully go over the whole pelvic region. In other words, it is quite safe to say that if, after repeated irrigation and curetting the uterus, no improvement is noted, we should suspect that the pathogenic organisms have invaded deeper tissues or organs, as the pelvic connective tissue, or that of the broad ligaments, the tubes or ovaries, the parenchyma of the uterus, the peritoneum, the lymphatics or veins.

The exact diagnosis in any given case of sepsis is a matter of prime importance. The term "puerperal fever" is quite general and indefinite as to the lesion or nidus. Any portion of the genital canal may be the point of attack and the local manifestations will differ accordingly, as well as the symptoms, prognosis and treatment.

Then, also, conditions may vary according to the particular variety of bacteria present. In the case reported, instead of streptococci, the staphylococci or colon bacilli may have been present and hence no result from antistreptococcic serum could be expected.

It is not within the scope of this paper to deal with the prophyl-

active methods in obstetric practice. This has been done very recently by other and abler hands than mine. The last word, however, has not been said on this subject.

Preventive methods will not be exhausted nor complete when obstetricians have attained perfection in aseptic technic. We shall have still to consider the environment of the patient and the education of the great mass of the laity.

Generations yet unborn will have the same lessons to learn. It is a heavy burden for the general practitioner, but at present he must bear the sole responsibility in this warfare against the ubiquitous bacteria. Our best endeavors may be thwarted by the dirty habits of the patient or by the meddlesome attention of friends or the unskilful care of so-called nurses. We would not underestimate the tremendous responsibility resting upon the physician, but it is going too far to say that in every case of puerperal sepsis he is the sole "particeps criminis," or even that he is the chief among germ bearers or distributors.

The modern trained nurse helps to solve the problem of aseptic midwifery, so also does the present day lying-in hospital, by demonstrating correct methods of procedure, and by reducing the mortality to almost the zero point.

An apology is perhaps due for bringing to your attention a case which, according to the dictum of some authorities, ought to have been prevented, but "let him that is without guile cast the first stone." As long as the poor and middle class of women must be confined in their own homes, with limited conveniences and unskilful nursing, just so long will we have septic cases to deal with, and it is not necessarily a reflection upon the average practitioner nor proof that he has failed to profit by the modern teachings of asepsis or to accept the same.

The world must be peopled in accordance with Divine command, and it happens at this end of the eighteenth century that this command is being obeyed chiefly by those who can least afford the luxuries of a well arranged lying-in chamber. Therefore, the time seems well spent in considering the management of puerperal sepsis from the curative as well as the preventive standpoint.

Little Falls, N. Y.

ECLAMPSIA.*

F. L. BRIGHAM, M.D.

IN introducing my paper on eclampsia, I have formed my opinions largely from the gleanings of other writers upon this subject whose experiences and ideas I shall, to some extent, reproduce.

Eclampsia is a symptomatic disorder, characterized by convulsive or epileptiform seizures, that suddenly come on prior to, during, or after labor, which are fortunately, in most cases, easily controlled. Its frequency is about the proportion of one in five hundred pregnancies, and the death rate nearly one in seven hundred confinements, as stated by the board of health of New York City, taken from a nine years' record.

In my own practice, eclampsia has occurred about one in one hundred cases, and death rate rather uncertain, for the reason that the only case I have lost was my first, the record extending over a period of twelve years. My treatment in my subsequent cases has been materially different from my first.

In the majority of patients the premonitory symptoms announcing the impending outbreak are headache, often limited to one side, loss of memory, vertigo, gloomy forebodings, flashes of light before the eyes, contracted pupils, amblyopia, some times amaurosis, ringing in the ears, dyspepsia, nausea, vomiting, dyspnœa, œdema of the face, of the labia majora, and of the extremities, and finally, and of the most importance, presence of albumin and casts in the urine. The attacks resemble epilepsy, the cry only lacking.

When they occur during labor, the first convulsion often is preceded by a short calm in which the patient ceases to complain, closes her eyes, and seems to have sunk into a peaceful slumber.

This deceitful truce which should always excite the keen attention of the physician, is followed in a few minutes by convulsive movements of the orbicularis muscle, giving to the patient a smiling aspect. Suddenly the eyelids open, the eyes become fixed and the pupils contract; then in a few seconds the eyelids open and shut rapidly, the eyes move from side to side or roll upward,

*Read before the Vermont State Medical Society in Burlington, Vt., October, 1899.

while the pupils dilate and lose their sensitiveness to light; very rapidly the convulsive twitchings extend to the other muscles of the face, the mouth opens and is drawn to one side, the head is moved from shoulder to shoulder some times with lightning-like alternations.

As a consequence of the resulting disturbances in the circulation and respirations, the carotids pulsate with great distinctness, the superficial veins of the neck swell, the conjunctivæ become injected and the face is cyanosed, the heart's action becomes intermittent, and the breathing irregular and stertorous. In favorable cases, after the expulsion of the ovum, the attacks cease or diminish in frequency and intensity, the pulse and the respirations become quiet and the coma passes gradually into slumber. On awakening, the patient complains of headache and of impaired memory, and has no recollection of the perils through which she has passed.

Professor J. C. Edgar, M.D., of Cornell University Medical College, New York City, says that the real cause of the eclampsia in the human female is still an unknown quantity.

As far as we are aware, no new light has been thrown upon the pathology and etiology of the condition. The pre-eclamptic condition and the subsequent eclamptic seizures are due to uremia, hydraemia, ammoniaemia, reflex irritation, microbial influences, or toxæmia.

Modern research does not permit us to state, though most modern observers are agreed that it is caused by the influence upon the system of some toxic material, biliary, urinary, foetal, or all three. But what that material is, has not up to the present time been determined. It appears probable, however, that the condition has not one, but many causes. Dr. W. H. Morse, asking for more light in the Medical Summary, May, 1899, says, that he finds germs in both the urine and the blood which he does not recognize as occurring in pregnant women free from eclampsia.

Further modern research and study would seem to prove that the toxæmia of pregnancy has certain well-marked symptoms and signs to guide us to a diagnosis of this condition, and that in the majority, if not in all instances, this state extends over a period of days, if not weeks or months. That the condition is always accompanied by some failure of the eliminative organ to do their duty, seems quite certain, notably on the part of the kidneys. If this assumption is correct, then of the two treatments of the

eclampsia, the preventive and the curative, the former is by far the most important; especially so when we come to find that in the majority, if not in all cases, the eclamptic seizure is a preventable accident.

Dr. Edward P. Davis has been strengthened in his belief by his own observations, that eclampsia is largely preventable; he also says that when urea fell to 1.5 per cent, stimulation of the excreting processes resulted in distinctly favorable results in all cases in which toxic symptoms were previously present. This does not prove that urea causes convulsions, for experiments upon rabbits that have previously been injected with urea, do not have convulsions or show toxic symptoms.

Bouchard found that bile had nine times the toxic power of urea; he also proved that normal healthy urine injected into a rabbit produced toxic symptoms in the animal; his experiments further show that in renal sufficiency the poison retained in the patient's blood greatly contributed to the eclamptic condition; this being true, the elimination of this poison retained in the blood we would expect would prevent an eclamptic seizure.

We are all familiar with the fact that when the fœtus dies in utero and is delivered, as in the case of a living child, the eclamptic condition usually ceases.

Our enlightenment as to the cause of puerperal eclampsia, little as it is, gives us a working theory, if not a key, to successful preventive treatment.

Our early recognition of the pre-eclamptic state is essential to successful treatment; something besides an examination once in one, two or three months for the presence of albumin is necessary, since the absence of albumin in the urine is found in from nine to sixteen per cent of cases. We must do something more than look to renal insufficiency, as it indicates a marked diminution in the quantity of urine and the specific gravity of the same, and the amount of urea excreted. When we watch our cases of pregnancy for physical signs of pronounced renal inadequacy as an index of an approaching eclampsia, or the overcharging of blood with toxic material as high arterial tension, headache, gastric disturbances, physical and mental lassitude and failure of bowels, liver, skin, and lungs, to properly perform their work, and treat the same understandingly, then, and only then, have we performed our duty to our patients. So much for preventive treatment.

The curative I will speak of by giving cases and my mode of treatment.

Mrs. M. W., age 26, primipara. I was called late in the evening, about eleven o'clock P.M. Patient complained of headache; said she was six or seven months' pregnant, and she had not passed very much urine for several days until the day before, when she passed more, and was all right, as she expressed it, was passing in abundance. Her bowels being constipated, having not moved for several days, I ordered salines and gave triple bromides. When I left her I hoped to find her better on my return, but such was not my pleasure, for I was called in in about two hours to find her in convulsions. I gave her chloroform and sent for counsel, who arrived in an hour or two, but in spite of our treatment, my patient died, after having convulsions with only short intervals of rest for fourteen hours.

Mrs. I. Fl., age 28, primipara. I was called in the morning but was away, so did not see her until about 3 o'clock P.M. I found her in convulsions. Her friends told me that she had been having spasms since morning, having had eight convulsions. I used chloroform to control spasms, but they continued for six hours when she became able to swallow, then I gave her one-half drachm of veratrum viride with one half grain sulphate of morphine. In one hour I repeated the veratrum viride when the convulsion ceased, and I delivered her of a child that lived but a few minutes; the mother made a good recovery.

Mrs. A. E., age 19, multipara. I was called in the afternoon at 5 o'clock; found that the woman had been having convulsions all day, having had eight spasms before my arrival, and two after; the first one came on while I was removing my overcoat; I immediately gave inhalations of chloroform to relieve spasms, then gave veratrum viride, twenty drops, and sulphate morphine, one-half grain, hypodermically, as she could not swallow. She had one more convulsion after, but not as severe, and I delivered her of a three-pound baby that lived fifteen days; the mother made a good recovery.

Mrs. A. N., age 19, primipara. I was called in the evening about 8 o'clock; found that she had had two convulsions. I gave her twenty drops veratrum viride and one-half grain morphine sulphate, hypodermically; she did not have any more convulsions, and as she was resting quietly, I did not disturb her for twenty-four hours, when she gave birth to an eight-pound boy.

Both mother and child are doing well. The mother made a good recovery.

Now I will not weary you with more cases, for these have proved, to my mind, that *veratrum viride* is the remedy par excellence in these conditions. I do not, however, believe that it is always necessary to use morphine and with some patients you cannot for reason of the idiosyncrasy to the drug. I have omitted it where I was sure that such idiosyncrasy had previously existed and had good results.

Some authors say that morphine is antagonistic to *veratrum viride* in its effects. Be that as it may, I had good results when combined, and had very favorable results when the morphine was omitted.

I am well aware that my experience is not enough to prove anything positive, but it is enough to inspire in me confidence in the treatment, until some bad results arise to check my further use of the drug. Then it may become necessary to look for a different remedy.

In speaking of the above remedy, I have not given my reasons for doing so; it is this: to reduce arterial tension and to soften the rigid os, thereby removing causes producing the malady.

In earlier days writers taught, and practitioners relied, largely, on the use of the lancet to accomplish these results.

I believe that *veratrum viride* is the remedy that will successfully supplant the use of the lancet in the treatment of puerperal eclampsia.

Pittsfield, Vt.

TYPHOID OTITIS.

CHARLES F. PAINTER, M.D.

SURGICAL interest has often been drawn to the lesions occurring in bones after typhoid fever. Such lesions situated in the long bones in the form of a periostitis or osteomyelitis are commonly enough reported in the literature. A less common situation for such lesions is in the spine, and attention to their situation in this part of the anatomy has been drawn by Gibney. The localization of the process in the hip joint is still less com-

mon. The cases which I wish to report are of osteitis due to typhoid situated, one in the hip joint and the other in the spine.

CASE I.—T. Y., a male, aged 21 years and single entered the hospital, August 30, 1899, for the correction of a flexion deformity at the left hip. He had been under observation in the outpatient department for some months. The patient is a healthy Englishman, a toy manufacturer by occupation. His history previous to the present disease had been negative except for a "slow fever" several years ago. In October, 1898, he had a severe attack of typhoid fever and was under the observation of a competent physician. During the fourth week an abscess developed in the back to the left of the spine in the lumbar region. This discharged for a time and then healed.

At the first visit to the clinic there was considerable flexion of the left thigh, all motions at the hip guarded; pain referred to the left knee, thigh and hip which has compelled the use of crutches. Atrophy of thigh about $1\frac{3}{4}$ inches; calf, $1\frac{1}{2}$ inches; $\frac{3}{4}$ of an inch of apparent and $\frac{1}{4}$ to $\frac{1}{2}$ an inch of real shortening, an amount which is, of course, within the normal limits. A slight amount of trochanteric thickening and a limitation to the motions of the thigh in all directions. There was about 20° of permanent flexion. Patient complains all the time of pain in the knee and thigh. Patient was given crutches and kept under observation until September 1st, 1899, when, on account of the persistence of the symptoms, and because of the importunity of the patient, it was decided to give him an ether examination and do what seemed to be indicated, even to an excision of the hip. Under ether a few slight adhesions about the hip were broken up, the flexion deformity corrected, and as an unrestricted arc of motion in all directions at the joint was obtained, nothing further was done. The patient was discharged from the hospital and has been encouraged to use the limb. Some stiffness remains and use causes soreness, both of which are gradually disappearing.

It may be urged that no positive evidence has been adduced showing this to be a typhoid lesion of the hip. In favor of it we have the evidence of a competent general practitioner, that he was going through the course of a typical typhoid at the time of the commencement of hip symptoms, and the clinical picture at the end of a year is decidedly unlike that presented by a tuberculous process. There is no shortening of the limb; the sinus

remained open only a very short time and has never reopened, and the general condition of the patient has been excellent after his convalescence from the acute fever. Altogether, then, there has been an acute, suppurative, osseous process occurring during typhoid fever, which has run its course in a month or so and produced very little destruction of the bone, under conditions in which a tuberculous change would have ordinarily caused much greater damage to the bones and consequent deformity.

CASE II.—This was the case of a male, 35 years of age, a shipper by occupation, who had never been sick until the development of typhoid fever for which he was treated at the Boston City Hospital one month before entering the clinic. He had a very severe typhoid and was sick three months. Previous to that he had had no trouble with his back.

One month after discharge from the hospital he entered the Orthopedic clinic because of pain and weakness in the small of his back. There was a marked kyphosis involving several vertebrae with accompanying muscular spasm. After a two weeks' rest in bed all his acute symptoms had disappeared, and a leather jacket was made for him which he wore the better part of a year and then discarded voluntarily, and has had no trouble since.

He entered the clinic in June, 1898. He performed his duties as a shipper without inconvenience. The deformity persisted in a great measure. Like the previous case we have the sudden onset of an acute bony deformity of the spine occurring in the course of a protracted convalescence from typhoid fever. We have the rapid recovery from an apparently acute bony process in a manner which is practically unknown in tuberculosis of the spine in adults.

In the presence of the diagnosis of typhoid fever made by competent observers, and the subsequent histories of the cases, so different from the usual history of tuberculous lesions in these locations, it seems to me that one is justified in regarding them as typhoidal in origin.

372 Marlboro Street, Boston.

INTESTINAL OBSTRUCTION FROM BILIARY CALCULI.*

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INTESTINAL obstruction has been observed and written of since the days of Hippocrates, still it retains its mysteries for the disciple of medicine. Its causes are so numerous, its symptoms so varied and its fatality so great that necessity for apologizing for presenting this paper is not felt, though but one of its many phases, gall stone obstruction, is to be considered.

Frequency.—Intestinal obstruction from biliary calculi is very uncommon. Brinton found in 500 cases of intestinal obstruction but 24 cases due to gall stones, and Leichtenstern found but 41 in 1,541 cases of bowel occlusion. In the Manchester Royal Infirmary but one case, in 50,000 patients treated for all troubles, was found. As it is a condition practically limited to late life its rarity is to be expected.

Varieties.—The obstruction is usually, though not always, due to actual blocking of the intestinal lumen by the stone. A localized peritonitis in the region of the gall bladder may paralyze the bowel in that vicinity, causing obstruction for a short time, but usually ending in recovery. Twisting of the small intestine may result from biliary colic and occlusion may be produced from the vigorous contortions of the bowel incident to its containing a gall stone. Again, after the stone has passed, peritonitic adhesions may result in complete occlusion. The healing of a large cystico-duodenal fistula may cause such narrowing of the bowel that nothing can pass it.

Large calculi nearly always reach the intestine by the formation of a fistula between the gall bladder and the duodenum. This opening, of necessity, is often of great size—even large enough to admit the insertion of four fingers, and its constancy as shown by autopsies and laparotomies for intestinal obstruction from gall stones argue very strongly for this pathological process. Roki-

*Original Abstract of paper read before Mississippi Valley Medical Association, in Chicago, Ill., October 4th, 1899.

tansky and Abercrombie, however, believe the largest stones found in the intestines can pass through the bile duct. These stones ulcerate also into the peritoneal cavity, the colon, the stomach, the urachus and thence to bladder, being expelled *per urethram* through the abdominal wall and, it is supposed, even through the kidney and the lung. The fistula between the bowel and gall bladder usually connects with the duodenum above the outlet of the ductus communis choledochus.

Location.—Leichtenstern collected 32 cases in which the site of obstruction was 17 times in the lower part of the ileum, 10 times in the jejunum and in the middle of the ileum five times. A few times the stone has been found wedged tightly in the ileocecal valve. The gradual lessening of the bowel diameter from above downward to the valve, together with the relative fixation of the lower part of the ileum by its short mesentery, would seem to explain the comparative frequency near the valve. Two stones obstructing the bowel at different places have been found at autopsies even in cases operated. At other times the obstruction has been relieved and the trouble been later repeated at nearly the same site by another stone. The rectum has been obstructed by gall stones, probably from pre-existing pathological conditions of the bowel, by deposits on the stone in the bowel, or by the direct passage of stones from gall bladder to colon.

Causes.—The question of etiology of gall stones and why they are expelled into the bowel is purposely avoided in this paper. Consideration will be given only to the reasons for occlusions resulting from their presence in the bowel. Gall stones of diameters less than one inch, no doubt, can be passed through the whole length of the bowel without serious annoyance to the individual, but as the small intestine is usually entered at its largest part by the stone, which is urged along through a canal having a decreasing caliber (the ileum is $1\frac{1}{4}$ inches wide, the jejunum $1\frac{1}{2}$ and the duodenum is larger), it finally reaches a point beyond which it cannot be forced. Then, too, in late life the muscular tonicity of the bowel is lessened, hence the propulsive power of it is lessened. Adhesions from former peritonitis and other conditions, formerly mentioned in speaking of the varieties, also properly belong under the head of causes. No satisfactory explanation has been given for the successful passage of large gall stones and fatal obstruction from others of about one-fifth the size. Disproportion in the size of the intestinal canal or difference in the general scale

of individuals may, in a measure, account for it where other conditions are absent. Women seem to be afflicted with this trouble four times as often as men.

I have had the good fortune to see one case, fortunate in experience and result, as the patient recovered without operation. The history of it is as follows:

Mrs. D., white, aged 44 years, multipara, was seen August 9, 1897, in answer to an urgent summons. Previous health had been good, although troubled very much from chronic constipation. The previous evening had eaten a hearty supper, including green corn, of which she was very fond, and later had danced considerably, retiring about midnight. Later in the night was attacked with colicky, abdominal pains, accompanied with almost incessant vomiting, a chill and collapse. Her husband, a physician, attributed attack to the corn, and administered morphia hypodermically, and repeatedly. The patient was found to be a large woman, weighing more than two hundred pounds, and having the largest abdomen I had ever seen, which was very pendulous and had very thick walls. The morphia had rendered her comfortable, but the examination was unsatisfactory on account of tenderness and thick wall. Calomel was ordered, although during the day she had had two loose stools. I next saw her August 12th, being called again, when I learned the bowels had not moved since the 9th, notwithstanding salines and purgative enemata had been administered. Pain and bilious vomiting were marked; the pulse was 100° and temperature 99°. Large enemata in the knee chest position were now ordered. Again that evening, with two consulting surgeons, it was agreed that with no improvement by morning, abdominal section would be done. The large enemata, about one gallon at a time, were continued every four hours, and about midnight she received the last one, as a few minutes later she passed by the rectum an ovoid cholesterine gall stone, measuring $1\frac{3}{4}$ by $1\frac{1}{4}$ inches in diameter and $3\frac{3}{4}$ and $4\frac{1}{2}$ inches in circumference. Its weight was just 200 grains. The vomiting ceased immediately, and the soreness and general depression soon passed away with complete recovery.

Symptoms.—A history of jaundice, biliary colic or other local phenomena usually antedates obstruction, but the symptoms are by no means indicative. They will, however, often approximately locate the site of obstruction. If the obstruction is high in the small intestine the vomiting begins earlier and assumes the biliary

variety; the degree of distension is less and, early in the attack, in favorable cases, a tumor at the seat of the trouble can be felt. Later the tenderness is so marked that examination of the abdomen is extremely unreliable. The distension is much greater if the colon be occluded and the vomiting becomes more stercoraceous. Movements of the bowel after the beginning of the attack may prove misleading as the intestine below may be emptied without relief to the real trouble. As to the location of the distension there is little of practical value known. Fever and high pulse rate indicate structural changes, such as necrosis of the intestinal wall and localized peritonitis. The persistent vomiting of fluids with no absorption of any to replace it causes a marked decrease in the amount of urine eliminated. The degree of decrease seems to be relative to the closeness of the seat of obstruction to the stomach. The shock incident to the condition probably acts similarly.

The size of the calculus is of interest. Some have been successfully passed through the bowel weighing as much as 493 grains, while fatal obstruction has resulted from a calculus, the weight of which was but 109 grains. Their shape is usually pyriform or ovoid.

Skiography has thus far proven unreliable in diagnosis.

Prognosis.—The result of any form of treatment in acute intestinal obstruction is not pleasing. When due to gall stones the mortality ranges from 44 per cent to 74 per cent. Until it is recognized as a surgical affection from the first, and prompt abdominal section done, the results will not improve. Resorting to early laparotomy ought not to be attended by a mortality higher than 10 per cent.

Treatment.—Various remedies have been employed; Hippocrates, and later others, recommended injection of air into the bowel. Tobacco smoke and infusion and different gases have been thus employed. Purgatives are positively harmful. Morphia and belladonna are the two best drugs in this condition. Of course, electricity has not been omitted. With medical treatment nearly half recover, but is that a sufficiently large proportion? In 1672 Barbette recommended laparotomy for acute intestinal obstruction, and as abdominal surgery is now practiced, its use in acute obstruction of the bowel from biliary calculi should give brilliant results. Medical treatment may be used for a short time and, failing, should be superseded by laparotomy, with a careful

exploration of the abdominal and pelvic contents. The seat of obstruction being found, the condition of the patient and the degree of mobility of the stone in the bowel will guide the operator in the subsequent steps. The plan of Tait,—passing a strong needle obliquely through the bowel wall into the stone to break it up may first be tried, the puncture wound being closed by a Lembert stitch. This failing, the stone should, if possible, be pushed higher in the bowel and a longitudinal enterotomy done with extraction of the stone. Gangrenous bowel, perforations, or localized peritonitis, with or without pus, should be treated *secundum artem*. It is always well to look for a second obstruction, as this has caused death in some cases. The deaths following laparotomy for this condition are nearly always from shock or sepsis, a strong argument for early operation. It would not seem improbable that early laparotomy in these cases should have a mortality of less than ten per cent.

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SUDDEN INCREASE OF INTRA-ABDOMINAL PRESSURE A POSSIBLE DANGER IN THE OPERATION FOR THE CURE OF OLD, VERY LARGE RETAINED HERNIA.*

HENRY O. MARCY, M.D.

The writer reported two cases where death was attributed to the greatly increased intra-abdominal pressure, produced by the return of the displaced organs. The subject is one of more than usual interest, since operation for the cure of hernia is now undertaken by a large number of surgeons, and no reference has been made by any author to the danger which may arise from this cause. On this account, Dr. Marcy has reported these cases with careful detail, and his paper merits thoughtful study by those who operate upon large hernia. The author draws the conclusion that, where any considerable portion of the intestinal contents have been for a long time displaced, it

*Original abstract of paper read at the annual meeting of the New York State Medical Association in October, 1899.

is advisable to submit the patient to quite a period of retention in bed, with a limited diet and moderate purgation. A loss of ten per cent in weight may not be excessive, and this will mean not only by that ratio a less amount of abdominal contents present at the time of operation, but that there will be a corresponding reduction in the hernial contents to be returned. In even a greater degree will the abdominal wall be thinned and relaxed. Little by little, during the prolonged period of treatment, the hernial tumor will lessen by a more or less spontaneous reduction of the parts and the circulatory equilibrium also become more nearly normal. Dr. Marcy advises that these factors be taken into careful consideration in every case of old, very large retained hernia to be submitted to surgical treatment. He also thinks, with the exercise of such care, the conditions must indeed be very exceptional, where the cure of hernia may not be safely effected. In a consecutive list of about five hundred operations undertaken for the cure of hernia by Dr. Marcy, the case reported is the only one where the danger line seemed to be approached where the integrity of the intestinal canal was not involved.

Cambridge, Mass.

A CASE OF CYSTITIS OF LONG STANDING, COMPLICATED BY CHRONIC MALARIA, TOGETHER WITH SLUGGISH LIVER AND HABITUAL CONSTIPATION.

J. W. WALKER, M.D., (HARV.).

THE following case may serve to illustrate the maxim that we should never abandon hope of a cure, so long as any remedy, compounded upon rational and scientific principles, remains untried.

The patient, Mr. R., eighty-two years of age, has suffered for several years from chronic cystitis, with occasional acute exacerbation.

The original cause of this cystitis was, undoubtedly, the careless (or rather the *ignorant*) use of unclean catheters.

Like many elderly men he has enlarged prostate, and has been compelled for years to rely on the catheter for the evacuation of his bladder; but had never been taught the importance of keep-

ing this instrument clean; knew nothing of the value of thorough sterilization.

As a result the flexible rubber catheter which he used rapidly became foul: and its repeated introduction in this condition gave rise to an acute cystitis, which finally became chronic, and has lasted up to the adoption of the treatment indicated below.

In addition to this trouble, he suffered from chronic malaria and a sluggish liver, together with habitual constipation, which last symptom the old gentleman himself, being an enormous eater, regarded as not the least of his afflictions.

He had tried so many remedies and doctors without effect, and was so querulous and petulant in consequence of his advanced age, that it was difficult to induce him to take any medicine at all.

I had never before used thialion, but its composition warranted the belief that it would prove an ideal remedy for this class of disorders, while the published reports of other practitioners as to its effects in similar cases confirmed this idea.

Following the suggestion given on page 22 of the pamphlet on uric acid, I combined quinine with thialion in this case, giving two grains of quinine three times a day, while the thialion was given in teaspoonful doses every morning dissolved in a cup of hot water.

At the same time I consigned the old rubber catheters to the ash-barrel, procured a proper prostatic catheter of block tin, which could readily be sterilized by boiling, and taught the patient how to use and care for it.

The results of this change of treatment were rapid and satisfactory, both to myself and the patient.

He has had no more chills, has large, regular, mushy evacuations of the bowels, and most important of all, the amount of urine voided has greatly increased, while the former purulent, mucous and bloody discharges have totally disappeared. He is so delighted with his improved condition that he says he feels twenty years younger, and what is most remarkable of all, for the last three days he has been able occasionally, for the first time in twelve years, to empty his bladder in the natural manner, without the use of the catheter.

This case is certainly a convincing proof of the efficacy of thialion in this class of cases; and how many such there are, in the hands of my brother practitioners all over the country, which might be cured as this has been, and as easily!

Los Gatos, Cal.

NOTE.

With characteristic energy and progressive interest the Antikamnia Chemical Company have put forth a couple of new tablets. These are known as the "Antikamnia Laxative Tablet," containing one-eighth of a grain of cascarn and one thirty-second of a grain each of aloin, podohyllin and extract of belladonna and the "Antikamnia and Quinine Laxative Tablet" in which part of the antikamnia is replaced by one and three-fourths grains of bisulphate of quinine. Physicians will at once recognize the therapeutic value of these combinations.

The laxative elements ensure an abundant flow of "Lucus entericus" and of bile and efficient action, not only of the muscles of the small intestine, but of the colon as well.

This form of quinine is well recognized as an excellent tonic.

BOOK REVIEWS.

ESSENTIALS OF PHYSICAL DIAGNOSIS OF THE THORAX. By ARTHUR M. CORWIN, A.M., M.D. Third edition, revised and enlarged. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price, \$1.25. net.

This little volume, intended primarily for the author's classes in Rush Medical College, presents, in this, its second revision, the essentials of a book useful to the practitioner as well as the student. These are brevity, accuracy, completeness in necessary details, freedom from descriptive details, careful grouping, skilful typography and an excellent index. Many times we have not the time to search thoroughly the full account given in a larger book on medicine or diagnosis, and just here this little book, readily carried in pocket or bag, will be found most convenient.

ESSENTIALS OF MEDICAL CHEMISTRY, ORGANIC AND INORGANIC. By LAWRENCE WOLFF, M.D. Fifth edition, thoroughly revised by Smith Ely Jelliffe, M.D. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price \$1.00. net.

This is No. 4 of Saunder's Question Compounds, of which series over 175,000 copies have been sold. Thus have the student body given their approval. The new edition differs from

the others chiefly in presenting fuller details of physiological chemistry. The new facts constantly accumulating in this line are well outlined. The fundamentals of physics and chemistry of course do not change. The book includes questions on medical physics, chemical philosophy, analytical processes, toxicology, etc.

ESSENTIALS OF ANATOMY. By CHARLES B. NANCREDÉ, M.D. Sixth edition, thoroughly revised by Fred J. Brockway, M.D. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price, \$1.00. net.

This is a larger book than the "No. 4" noticed above and is naturally more fully illustrated. The revision shows an improvement in their illustrations as well as in the clearness and precision of the text. The student, who in his review work shall thoroughly master this book, will be well fitted to meet the anatomical questions of medical and surgery of his professional life.

WARNER'S POCKET MEDICAL DICTIONARY. By WILLIAM R. WARNER. Published by William R. Warner & Co., Philadelphia. 1898. Price, 75 cents.

This is a neat, attractive little volume presenting the pronunciation and definition of ten thousand essential words and terms used in medicine and associated sciences. There are also the tables, arteries, nerves, muscles, bacilli and dose table usual in such volumes of the best class, all up to date and clearly and conveniently arranged.

TEXT-BOOK OF EMBRYOLOGY FOR STUDENTS OF MEDICINE. By JOHN CLEMENT HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 190 illustrations, 26 of them in colors. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price, \$2.50 net.

In this line more than in most others we must nearly all of us be contented to class ourselves as "students." Pediatricists especially are continually meeting with problems in diagnosis and treatment of young children, which can only be solved by a knowledge of the development of the embryo. The work is complete and yet concise, making a handy volume of nearly 400 pages. Each chapter is complete in itself, and the chapters succeed each other in natural sequence. The illustrations are carefully chosen and described, and are most beautifully reproduced on the printed page. The important terms on each page are "faced up" and hence at once attract attention and thus save time and effort when looking up any special part of the subject.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

A CLINICAL STUDY OF THE LYMPHATIC GLANDS IN ONE HUNDRED CASES OF SCARLET FEVER.*

JAY F. SCHAMBERG, A.B., M.D.,

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for Postgraduates in Medicine; Fellow of College of Physicians
of Philadelphia.

THERE is, perhaps, no acute eruptive disease which occasions more frequent errors of diagnosis than scarlet fever. The most experienced clinician will frequently find himself unable to pronounce a diagnosis in the presence of a scarlatiniform rash. There is no one symptom which is in itself at all characteristic of the disease. The coexistence of at least several symptoms is necessary to the establishment of a diagnosis.

The lymphatic glandular system is involved in a large number of acute and chronic infectious diseases. Among the acute eruptive fevers it has been particularly noted in Rötheln or German measles, in which disease it is invoked as a diagnostic feature. Its occurrence in scarlet fever is but casually, if at all, referred to in many text-books on the practice of medicine.

I herewith present the tabulated results of an examination of the superficial glands in 100 cases of this disease. In the appended table there are noted the day of the disease, and the respective sizes of the inguinal, epitrochlear, axillary, maxillary, lingual, submaxillary, anterior cervical and posterior cervical glands. These have been compared with well known objects, such as the pea, bean, lentil, almond, cherry, hickory nut, egg, orange, etc.

*Read before the Philadelphia Pediatric Society, October 10, 1899.

GLANDS IN SCARLET FEVER.

Day.	Name.	Ing.	Epit.	Axill.	Sub. L.	Sub. M.	Max.	Ant. C.	Post. C.
1	3d	G. A.	bean	.....	bean	.....	bean	.....	bean
2	5th	W. T.	bean	.....	bean	.....	almond	.....	bean
3	2d	I. S.	bean	.....	bean	.....	bean	.....	bean
4	5th	J. D.	bean	pea	pea	.....	walnut	.....	bean
5	5th	T. A.	bean	.....	bean	.....	almond	.....	bean
6	5th	J. A.	pea	.....	bean	.....	almond	.....	bean
7	4th	E. U.	bean	pea	bean	lentil	almond	.....	bean
8	3d	M. U.	bean	.....	bean	.....	bean	.....	bean
9	5th	K. L.	bean	.....	bean	.....	almond	.....	bean
10	5th	L. W.	bean	.....	pea	.....	almond	.....	pea
11	3d	M. M.	bean	.....	bean	.....	almond	.....	bean
12	3d	L. S.	bean	.....	.....	.....	almond	.....	bean
13	4th	M. F.	bean	.....	bean	.....	bean	.....	bean
14	3d	I. V.	bean	.....	bean	.....	almond	pea	pea
15	9th	B. T.	bean	.....	pea	.....	bean	pea	pea
16	3d	U. P.	bean	.....	pea	.....	.....	bean	pea
17	5th	R. G.	bean	.....	pea	.....	.....	bean	pea
18	4th	R. K.	pea	.....	bean	bean	bean	bean	pea
19	4th	M. K.	pea	.....	almond	almond	almond	hickory	bean
20	2d	T. C.	pea	.....	pea	.....	.....	pea	bean
21	3d	B. T.	pea	.....	pea	.....	.....	pea	bean
22	7th	J. R.	bean	.....	bean	.....	hickory	pea	bean
23	7th	H. L.	bean	.....	bean	.....	hickory	pea	bean
24	3d	M. Me.	bean	.....	pea	bean	bean	almond	pea
25	3d	R. F.	bean	.....	pea	pea	pea	almond	bean
26	4th	C. J.	bean	.....	bean	.....	almond	bean	pea
27	4th	L. V.	bean	.....	bean	.....	almond	bean	pea
28	4th	N. Me.	bean	.....	bean	.....	hickory	bean	pea
29	8th	A. G.	bean	.....	.....	.....	bean	pea	.....
30	6th	F. G.	bean	.....	l. pea	pea	pea	hickory	bean
31	5th	B. G.	bean	.....	bean	.....	bean	almond	pea
32	9th	H. F.	bean	.....	pea	.....	.....	hickory	pea
33	4th	M. S.	bean	.....	pea	.....	.....	hickory	pea
34	3d	F. S.	bean	.....	pea	.....	.....	hickory	bean
35	7th	F. S.	bean	.....	pea	pea	bean	walnut	bean
36	6th	W. F.	bean	.....	bean	.....	pea	bean	bean
37	7th	H. I.	pea	.....	pea	pea	bean	almond	pea
38	5th	H. R.	bean	.....	pea	pea	.....	hickory	pea
39	13th	J. H.	pea	.....	pea	.....	.....	bean	pea
40	14th	J. B.	bean	.....	bean	.....	bean	pea	bean
41	11th	L. F.	pea	.....	pea	.....	.....	bean	pea
42	9th	C. U.	pea	.....	bean	pea	pea	almond	pea
43	7th	C. U.	pea	.....	pea	.....	pea	cherry	pea
44	4th	S. B.	bean	.....	bean	pea	bean	almond	pea
45	3d	A. B.	pea	.....	pea	.....	bean	almond	pea
46	2d	A. K.	bean	.....	bean	.....	.....	cherry	pea
47	4th	S. B.	pea	.....	pea	.....	.....	almond	pea
48	8th	E. M.	pea	.....	pea	.....	.....	cherry	.....
49	9th	B. B.	pea	.....	pea	lentil	.....	cherry	pea
50	15th	E. E.	bean	.....	bean	pea	bean	cherry	pea

From an examination of the above tables it will be seen that the various lymphatic glands are enlarged in the following proportion of cases:

Inguinal glands.....100 per cent.

(a) pea-sized.....23 per cent.

(b) bean-sized.....77 per cent.

Axillary.....96 per cent.

Maxillary.....95 per cent.

Posterior cervical.....77 per cent.

Anterior cervical.....44 per cent.

Sub-maxillary.....36 per cent.

Epitrochlear.....26 per cent.

Sub-lingual.....25 per cent.

The inguinal glands were in the main enlarged to the size of a

GLANDS IN SCARLET FEVER—*Continued.*

Day.	Name.	Ing.	Epit.	Axil.	Sub. L.	Sub. M.	Maz.	Ant. C.	Post C.
51	7th	M. W.	bean	pea	.....	bean	almond	bean	bean
52	6th	D. W.	bean	lentil	pea	.....	almond	.....	bean
53	5th	J. D.	pea	.....	pea	.....	almond	walnut	pea
54	4th	A. V.	pea	.....	bean	.....	.....	walnut	.....
55	7th	L. M.	bean	pea	bean	.....	pea	almond	bean
56	5th	K. K.	bean	pea	bean	.....	pea	almond	pea
57	6th	N. B.	bean	pea	bean	.....	bean	hickory	bean
58	6th	M. P.	pea	pea	pea	.....	almond	.....	pea
59	5th	M. M.	bean	.....	bean	pea	bean	bean	pea
60	6th	E. S.	bean	pea	bean	pea	bean	almond	bean
61	2d	F. D.	bean	pea	bean	pea	bean	almond	bean
62	11th	M. B.	pea	lentil	bean	.....	bean	.....	bean
63	5th	C. O.	bean	.....	pea	.....	bean	hickory	pea
64	4th	J. B.	bean	.....	bean	.....	bean	almond	pea
65	6th	J. B.	pea	.....	pea	.....	almond	hickory	.....
66	4th	A. M.	bean	.....	bean	.....	.....	almond	bean
67	3d	H. M.	bean	.....	bean	.....	.....	almond	bean
68	4th	K. E.	bean	lentil	bean	.....	almond	almond	.....
69	5th	E. F.	bean	.....	bean	.....	.....	egg	bean
70	6th	M. G.	bean	.....	.....	.....	.....	almond	bean
71	3d	E. E.	bean	.....	bean	.....	.....	almond	bean
72	5th	W. C.	bean	pea	bean	.....	.....	almond	pea
73	5th	J. L.	bean	.....	almond	.....	bean	.....	bean
74	4th	A. T.	bean	pea	bean	.....	.....	walnut	bean
75	6th	J. T.	bean	pea	almond	.....	.....	walnut	bean
76	6th	H. S.	bean	pea	bean	.....	.....	almond	pea
77	7th	M. Mc.	bean	.....	pea	.....	pea	walnut	bean
78	6th	A. Mc.	bean	.....	bean	.....	.....	egg	bean
79	3d	A. G.	bean	.....	bean	.....	bean	bean	bean
80	3d	S. M.	pea	.....	pea	.....	bean	.....	pea
81	4th	Y. S.	bean	lentil	bean	.....	pea	egg	pea
82	4th	E. Mc.	almond	.....	bean	.....	bean	almond	bean
83	8th	B. K.	bean	pea	bean	.....	bean	almond	bean
84	12th	A. Mc.	bean	pea	bean	.....	.....	almond	bean
85	5th	M. Mc.	almond	.....	bean	.....	.....	walnut	bean
86	5th	Y. F.	bean	.....	bean	pea	bean	.....	bean
87	5th	Y. B.	bean	.....	bean	.....	bean	walnut	bean
88	8th	R. L.	bean	.....	bean	pea	bean	almond	pea
89	7th	B. P.	bean	.....	bean	pea	.....	bean	bean
90	11th	J. E.	pea	.....	bean	.....	orange	orange	pea
91	6th	S. W.	pea	pea	pea	pea	bean	hickory	pea
92	5th	D. L.	bean	.....	pea	.....	bean	bean	pea
93	3d	G. A.	bean	.....	bean	.....	bean	bean	bean
94	5th	W. T.	bean	.....	bean	.....	.....	walnut	bean
95	2d	I. S.	bean	pea	bean	.....	bean	almond	bean
96	5th	J. D.	bean	pea	pea	.....	.....	walnut	bean
97	3d	P. F.	bean	pea	bean	pea	bean	almond	bean
98	3d	M. G.	bean	.....	pea	.....	.....	hickory	bean
99	6th	H. M.	bean	lentil	pea	.....	.....	almond	bean
100	6th	E. S.	bean	pea	bean	bean	.....	almond	pea

pea or bean, although occasionally they would reach the dimensions of an almond.

The epitrochlear glands varied from the size of a lentil to a pea. Not infrequently the enlargement occurred but upon one side. From an examination of a few dozen more cases not included in these tables, I have received the impression that the epitrochlear gland is enlarged in considerable more than 26 per cent of cases of scarlet fever. Occasionally there is a second enlarged gland just above the epitrochlear gland.

The axillary glands varied in size from a pea to an almond. They were usually enlarged in clusters rather than singly. The axillary glands are best felt by putting the fingers well into the axilla (the arm of the patient being held a little from the body);

the glands are found by making pressure either against the head of the humerus or against the upper ribs.

The sub-lingual gland was scarcely ever larger than the size of a lentil seed.

The sub-maxillary lymphatic glands varied in size from a pea to an almond. In one case a gland reached the size of an orange, broke down and suppurated.

The maxillary glands or those just behind the angle of the jaw, reached the largest size of any of the lymphatic glands and were the most frequent to undergo suppuration. In the above cases they varied from the size of a bean to that of an orange. The average was perhaps the size of an almond or hickory nut.

The anterior cervical glands, or those lying anterior to the sterno-cleido-mastoid muscle, were in the main pea or bean-sized, as were also those posterior to this muscle.

The enlargement of all the glands about the jaw and neck was more or less proportionate to the amount and intensity of the throat involvement.

The patients were examined at various stages of the disease, as early as the 2d, and as late as the 15th day. Unfortunately no cases were observed upon the first day of the disease, and consequently the date of commencing glandular tumefaction could not be accurately ascertained. In the cases observed upon the second and third day, however, the enlargement was well marked and it is quite probable that it was already present upon the first day. The duration of the enlargement doubtless varies in different cases. In several patients examined at intervals of a few days for three weeks, the glands were found to gradually diminish in size, but at the end of this time they were still slightly enlarged.

I had hoped that a study of the lymphatic glands might be of diagnostic aid in differentiating scarlet fever from the rashes occurring in the course of diphtheria. The occurrence of mild diffuse erythematous eruptions in diphtheritic patients is not uncommon. Some of these eruptions bear the distinctive ear-marks of scarlet fever, and are accompanied by more or less characteristic general symptoms. Many, however, are of an indefinite character and unattended with any more definite systemic manifestations. The question then arises—Is the eruption a toxic rash—the so-called “erythema diphtheriticum,” or is it a mild scarlet fever? In order to compare the glands in diphtheria with those in scarlet fever, a control examination of some twenty-five

or more cases of diphtheria was made. This examination sufficed to demonstrate that there is a wide variation and lack of uniformity in the adenopathy of diphtheria. In general, the glands are much less markedly enlarged than in scarlatina, but in some cases the glandular intumescence may reach quite as intense a degree.

As a diagnostic aid, therefore, in differentiating the rashes in diphtheria from true scarlatina, the study of the glands is perhaps of inconsiderable value. A well marked enlargement of all of the superficial glands, particularly the epitrochlear and axillary, would in doubtful cases, I think, tend to throw the balance in favor of scarlet fever.

In distinguishing between scarlatina and measles, which task is not invariably easy, an examination of the glands lends but little aid, because in the latter disease there is also a generalized glandular enlargement. It is to be noted, however, that the adenopathy of measles is not nearly as well marked as that observed in scarlet fever.

There is a class of affections closely resembling scarlatina in which an examination of the glands might be of considerable diagnostic importance. I refer to the eruptions grouped under the head of "erythema scarlatinoides." At the outset it is frequently impossible to distinguish between scarlatiniform erythema and scarlet fever. In this condition there is a generalized scarlatiniform rash with elevation of temperature. The rash of scarlet fever is due, in all probability, to the action of a specific toxin in the blood. Other toxins of a widely different character may produce similar eruptions. Thus these eruptions are prone to develop during the course of rheumatism, pyemia, septicemia, malaria, intestinal ptomain poisoning, typhoid fever, etc. They may also result from the ingestion of certain drugs such as quinine, mercury, belladonna, etc. I have not had the opportunity of examining the lymphatic glands in scarlatiniform erythema, but I am informed by a prominent dermatologist that in a number of cases observed by him, the glands were not enlarged. If this be true, the examination of the superficial lymphatic glands in scarlatiniform erythema should have considerable differential importance.

Statistics are frequently misrepresenting, and those presented above are to a certain extent no exception to the rule. Whilst it is true that the inguinal glands were enlarged in every one of the hundred cases of scarlet fever examined, it is more than prob-

able that in some of them the enlargement antedated the attack of scarlet fever. The percentage of apparently healthy children with pea sized or larger inguinal glands must be very considerable. Still the effort has been made in this work to eliminate this error as far as possible. It is in most cases not difficult to distinguish between an old and a recently enlarged gland. The former has a decidedly sclerotic feel with the resistance, say, of cartilage. The latter presents a peculiar resiliency with the consistency of liver. Whilst the inguinal glands are frequently enlarged in apparently healthy individuals, and the glands about the neck in those suffering from throat inflammations, this is not true, at least to the same extent, of the axillary and epitrochlear glands. In health, it is stated that the axillary glands cannot be felt, nor is the small gland above the internal condyle of the humerus palpable under normal conditions. Again the generalized character of these enlargements bespeaks their scarlatinal origin. In scarlatina it is known that all of the lymphatic structures of the body are hypertrophied. Microscopic research has demonstrated a hyperplasia of the lymphoid tissue of the spleen, liver and intestines. Pearce (Medical and Surgical Reports of Boston City Hospital, 1899), in 21 autopsies on scarlet fever patients found hyperplasia of the lymphoid tissue in every part of the body. It was not only noted in the subcutaneous and mesenteric lymph nodes, but also in the lymph nodules of the intestinal mucous membrane, particularly in Peyer's patches and the solitary lymph glands.

Hawley proposed some time ago to substitute the term lymphatic fever for scarlet fever.

The extent of glandular intumescence does not appear to be proportionate to the severity of the rash, but more to the intensity of the toxemia. Patients with high temperature and well marked eruptions are apt to have more marked adenopathy than those with but little fever and poorly marked rashes. Still it is not uncommon to find the glands considerably enlarged even when the associated symptoms are extremely mild.

The above work was carried on at the Municipal Hospital for Infectious Diseases, of Philadelphia, and I desire here to express my sincere thanks to my friend, Dr. William M. Welch, for the many privileges extended to me.

Philadelphia, Pa.

(For discussion see page 213.)

PUERILE INDIGESTION.*

F. C. MORGAN, M.D.

MR. PRESIDENT AND GENTLEMEN: Because this subject involves all the local lesions of the *prima via* and its appendages, from the teeth to the anus, details are debarred from this treatise. There is a class of patients which we all see, each member manifesting a similar train of symptoms to other members, and some type of indigestion is the diagnosis. Probably there are more patients in this class of business than in any other during the warmer months of the year. When we find a child salivating, vomiting frequently, caries of the teeth, having occasional colic, diarrhœa, constipation, tympanites, or any other phenomena connected with the digestive tract, there is evidently some disturbance of normal function, and an early correction of the abnormality will almost invariably result favorably. The causes connected with these lesions are great in number. Perhaps never identical in any two cases. Ignorance and carelessness on the part of nurse or mother can be set down as primary causes. About four facts govern the whole matter: Quality of food, quantity of food, frequency of administration, method of preparation. It seems to be something of a modern fad for mothers to avoid nursing their babies from the breast. This "improvement" in civilization, for a healthy woman, with an abundance of good milk, is a practical farce. If the mother has in her affection, the best welfare of her child, she will do for it whatever is demanded in this direction. From the lower orders of *mammalia* women can learn a useful lesson in feeding the young, and would that they had no other means. In other words, that it be obligatory. You may say that many women have no milk for the child, that it is an inherited tendency not to have any lacteal secretion. I will ask you—How many women are there that cannot have a flow of milk with proper management during pregnancy and after

*Read at the 86th annual meeting of the Vermont State Medical Society, October, 1899.

parturition? Occasionally there is an exception such as abnormal breast, sunken or fissured nipples, but I believe them few. The breast glands sometimes secrete colostrum for weeks and months after parturition, and this is quite sure to produce some diarrhœa or indigestion in the child.

There is no doubt but that the diet of the mother affects the child through the milk, and it may become unwholesome and injurious, but proper regulation of this matter will soon show its effect. I have seen, as you all have, serious forms of vomiting, acid secretion, diarrhœa, follow the use of too rich diet or vegetables and fruits. It is not essential that all mothers abstain from these things, especially vegetables properly cooked, and fruits, for in many instances they will have no particular effect in the child. Matters arising that create in the nurse violent anger, grief or fear, or almost any sort of emotion, may result in a severe form of indigestion in the child, and the care necessary to be exercised over the temperament and environments of the nurse is imminent. During dentition children will be, in the majority of cases, salivating freely and worrisome, and before long some disturbance of the digestive tract will follow. But why? Most women, unless thoughtful of the regularity of nursing, will put the child to the breast to stop it from crying, even if it is every fifteen or thirty minutes, and this will upset any stomach. It is improper feeding more than teething, while they attribute the causes all to the teeth. A normal dentition in a healthy, strong child, receiving regular proper food, ought not to be accompanied by much, if any, variation in the regular physiological processes. Probably the most perplexing matter that confronts the average physician, in the treatment of infantile diseases, is the nursing bottle. In many places we find a rubber tube two or three feet long, connecting the bottle and rubber nipple, so that the mother can lay the bottle in a chair beside the cradle, and go about her work, and the "child has something to keep it quiet." When she gets around to attend to it, it has vomited sour curdy cows' milk over its front, and then nursed again and vomited, and the whole programme has been repeated many times. This may go on for a long time without any bad results, but it is certainly a rugged child that will endure it and not get sick. With a slight degree of carelessness in cleaning one of these tubes, it will soon contain germs enough to infect all the children in the state. If they are not used they certainly will not be infected. Besides these items

referred to, there are general cleanliness, sunshine and fresh air. Wherever these features predominate, bacteria are few. A child inhaling atmosphere over a sour bib is swallowing poison.

Many of these matters are thoughtless neglect, but we all know about them. A good nurse knows enough about the antiseptic part of the world to keep the patient clean, but mothers do not always, and we must tell them. Many mothers are so fearful of something happening to the baby that they will confine them in a close room, and scarcely let them sniff a breath of open air. On this point they need instructing. Flannel bands are often removed in warm weather, but this is a great mistake.

SYMPTOMATOLOGY.

We all appreciate the signs of indigestion in general. Fever present or absent, coated or clear mouth, dry or moist tongue, vomiting or not, constipation or diarrhœa, worrisome or stupid, muscle spasms in sleep or convulsions, tympanites or colic, discharges, yellow, green, gray or watery. I have seen a few cases where there was no coating of the tongue, no diarrhœa or constipation, no fever, and the only symptom present of any disturbance was jerky limbs in the sleep. A thorough cathartic brought several foul green discharges. These cases may be properly divided into two classes, viz.: Those that have occasional attacks, and those that have the habitual variety. The occasional indigestion is marked by a sudden attack and quick recovery after vomiting, and possibly an acute diarrhœa has been the order of things, and nature has relieved itself of the offending material. On the other hand cases that have continued attacks are suffering from the persistent use of the wrong diet, and this will last until the diet is changed, and this may be sufficient without the aid of any medicine. The symptoms which would lead us to consider the differential diagnosis must not be forgotten. Stupor, fever, vomiting, headache, chills and quick pulse in those cases of habitual indigestion may indicate scarlatina, or mild diphtheria or meningitis, so after a careful examination it is sometimes impossible to make a diagnosis for a few hours. *One* important act must not be forgotten in examining any child that cannot talk or express its feelings, and this is examination of the pharynx. Failure to view the throat may sometimes result very seriously to patient and attendant. Having decided that we have some form of indigestion to deal with, what is to be done in the way of management

and treatment? Management may be a portion of the treatment, but it is of so much importance that special reference to it is obvious. If we can see the patient when we ought to (in the early part of its sickness), or while it is sthenic, the first attention should be paid to the clothing, hygiene and diet. If the child is not clean, have it bathed thoroughly with alcohol and water, and a well-fitting flannel band sufficient to cover the abdomen applied, and clean clothing. Second, what is the patient swallowing for nourishment? In the case of breast-feeding, ascertain whether the mother's diet is right, whether she is strong and has good digestion, whether her temperament is right, if she is pregnant or not, if sexual intercourse is frequent or not, if she sleeps well or not, and in fact, all there is to the mother's condition that will in any way render her milk unwholesome. Examine her milk, and if it is thin and blue there is something wrong. The most disturbance I have ever found with mother's milk, was in case of pregnancy during lactation. This means distress to the one nursing, and the next one probably as well. A little "previous" advice will be fitting on this question. If we have a healthy, strong woman nursing the patient, whose milk is right, well and good, but if not, take caution lest you treat the wrong patient principally. If the milk is bad suspend breast-feeding and treat the mother till her health is repaired, extracting the milk regularly for a time, and feed the child artificially, till she can again supply good milk for it. If this cannot be done, artificial feeding must be permanent. The mother may be lacking the predominant mineral constituent of the milk, viz., phosphate of calcium. This, with the exception of chloride of sodium, the chief mineral ingredient of the gastric juice. If this is the case administer it, together with whatever digestive ferments and tonics her case may demand. I have found in these cases maltine with pepsin and pancreatin valuable, lactophosphate of calcium, iron, quinine and strychnia, bovine, liquid peptonoids and lactopeptine. By all means produce good tone in the maternal digestive system. Regulate the diet and bowels and have her take liquids, possibly milk watered, or not, to aid the lacteal secretion, provided it is scant. In women who appear pale and anæmic, the whole derangement may depend upon disordered digestion and slow absorption. Such cases need digestive ferments and not iron. Too much iron has been given to pale people, when indigestion was the primary

cause of lack of hæmoglobin. Prof. King recommends fomentations of the leaves of the castor-oil plant, preferably the white variety, applied to the breast for a direct galactagogue.

The summary of breast-feeding may include the correction of indigestion, asthenia, and lacteal secretion of the mother, anatomical conditions being normal. How about the food of the infant, provided it be artificial? I have arrived at the decision that raw cows' milk is unfit for a baby, especially if weak or suffering from any stomach or bowel trouble; first, because it is unlike mother's milk, and second, because no two cows give the same grade of milk, especially as regards butter-fat. It is many times a matter of considerable experiment, to settle the question of artificial feeding. I have used about all the proprietary food products, and no single product will fit all cases of weak stomach. I am favorably impressed with lactated and Mellin's foods, although in serious indigestion I usually prescribe malted milk, especially if the stomach is very weak and vomiting is frequent. In the matter of constant diet, peptonizing tubes and sterilization of cow's milk with the admixture of sugar of milk and cream in proportion, such as will fit the case in hand, may be the best procedure, and in another case some of the foods referred to may be preferable. By all means make it impressive upon the nurse to feed regularly and an especial quantity—these to be governed by age and conditions. If the stomach and alimentary canal contain offending material fermenting, and full of poisonous microbes, clear it out freely. First small or medium doses of calomel each hour, followed with castor oil, and if the fever be high it is well to wash out the rectum thoroughly first. If the cathartic fails to operate and constipation is attending, salts in small doses may be necessarily added, but be sure to clear the intestine freely. It is my practice to administer after the cathartic small doses of sulphocarbolate of zinc or soda, depending upon diarrhœa or constipation, and repeat the castor oil every six or eight hours till the discharges are yellow and they have no odor. Antipyretics are seldom demanded in acute cases, for resolution is quite sure to follow thorough intestinal disinfection. If need be the calomel process may be repeated in 24 or 36 hours according to conditions, provided the first doses have failed to produce the desired effect. 1-10 to 1-6 gr. for several hours, or in some cases where discharges are watery and the patient depleted, it may be desirable to give the calomel and oil with a few drops of paregoric all at once.

After free catharsis the patient may be very feeble and the rectal application of the normal salt solution is very gratifying. Hypodermics of aromatic spirits of ammonia or alcohol may be desirable, but these are not the common demands. Support patient well, and by the careful judicious feeding prompt resolution may be expected, unless the patient has been sick for some time with the habitual variety of indigestion, and absorption of poison has taken place so as to interfere with the meninges or the ventricles of the brain. These symptoms mean something serious, and I would say that nearly all the child patients I have lost, have died from this complication. These conditions make the prognosis very grave, and whenever they ensue, it may be safely said, in most cases, that you could have been practically sure of recovery had you seen the patient at the proper time. Some of the old tried and trued remedies have not been superseded by modern invention. I refer to ipecac and opium. The resolving effects of Dover's powder with a little extra ipecac, upon the mucous membrane is well understood, and needs no comments. There are so many varieties of conditions controlling this class of patients that no fixed rule can be made to follow. Some may demand acid and some alkalies, some will demand excitants and some astringents, so the course to pursue is necessarily to be decided upon by the attendant. In cases where watery discharges are persistent I would give you a combination that I use with pleasant results: Bismuth Subnit., Camphorated Tr. Opium, Spts. Myristicæ, Mucilago Acassiae, Aqua Menthae Piperitæ Q. S., proportioning the ingredients to age and condition and omit paregoric if no colic or uneasiness. Mustard or some other counter irritant may be applied to abdomen. Children are easily dosed too much for indigestion, and the whole secret of success lies in establishing a satisfactory diet and regulation of the bowels. At convalescence I frequently give Lactophosphate of Calcium— $\frac{1}{4}$ to 1 teaspoonful doses according to age, and continue digestive ferments lactopeptine or pepsine and pancreatin till the stomach is strong. Milk of magnesia may be added to the food if the patient be constipated. It is natural that the young should recover from disease, and if people can be spurred to the importance of early attention to their children, their mortality would be wonderfully changed. I have a friend who has a family of children, and he says he employs the doctor to keep them well, for when any unusual condition is noticed, he is sent for at once. He pays his

physician about \$100 annually, and delights himself that this is the best investment he makes. When we can make people understand that fatal results sometimes occur from what seems a trivial affair, in the beginning, then we will hear from them in due time; when we have exercised over the populace our influence in this direction, and restored one of their children to health we have done one great act of philanthropy. After the first dentition the circumstances of digestive lesions will vary somewhat and so along to the second period of change in the economy, but the principles of management are practically identical. Reference has been made chiefly to infantile cases, which are first and foremost. Without the baby there is no adult, and when we have one and have it cared for properly, and fed regularly with precision, with cleanliness and bright eyes and pink round cheeks, the very rose-bud of humanity, its face pours out a glory to the world unexcelled by endless day.

Felchville, Vt.

INDIGESTION IN INFANTS AND CHILDREN.*

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INASMUCH as indigestion is often due to a lack of knowledge of the digestive organs in their normal state, I shall preface my remarks with a few suggestions on the subject of digestion.

When the surgeon attempts to dress a fractured ulna, he bares the uninjured member for the purpose of noting the normal conditions.

It is just as essential that we familiarize ourselves with the apparatus of the infant's digestion in health, before we endeavor to deal with these parts in disease.

Investigations have shown that the average capacity of the infant's stomach at birth is 1 1-5 oz.

At four weeks it is.....	2 oz.
At three months it is.....	4½ oz.
At six months it is.....	6 oz.
At nine months it is.....	9 oz., etc.

The above must be borne in mind when considering the etiology of indigestion.

*Read before "Mississippi Valley Medical Association," in Chicago, Oct. 5th, 1899.

The only elements of food acted on in the stomach are proteids. These are changed into acid-albumen, albumoses, and peptones, and this action is supposed to be accomplished through the agency of the pepsin and acid of the gastric juice.

According to Krueger, pepsin is present at birth, and even as early as the fourth month of embryonic life. Holt says, "the reaction of the stomach in fasting is acid, and that at this time free hydrochloric acid can be demonstrated. Following a meal of human milk it is alkaline; after one of cow's milk it is acid, or neutral."

Many good observers claim that very little digestion is carried on in the stomach—that it is more of a reservoir into which the milk is received. It is further claimed that the milk passes rapidly into the intestine, and, that in from 30 minutes to an hour after a meal of human milk the stomach of a young infant is often found empty. Where cow's milk is used, a half hour longer is required. Holt states in substance—"In the intestine the proteids, carbohydrates and fats are acted on by the pancreatic juice. The trypsin, which is active only in an alkaline medium, converts the proteids into peptones. In most cases a large part of the proteids passes but little changed into the intestine. The diastatic ferment of the pancreas has the power of converting starch into sugar. This action, however, is feeble during the first six months. The pancreatic juice actively emulsifies fat, even at birth. The functions of the liver, as indicated by its large size at birth, are important in indigestion. Bile assists in the digestion and absorption of fats; it also acts as a stimulus to peristalsis, and in this way aids in the absorption of all kinds of food. Its diastatic action upon starch is very feeble.

"From the stomach, the absorption of water, salts, sugar, and peptones may take place directly into the blood. In addition to these elements, fat is absorbed in the small intestine by means of the villi and the simple follicles of the mucous membrane. There is little or no digestive activity in the large intestine, though sugar, salts and peptones may be absorbed with moderate facility.

"Even in healthy nursing infants, complete absorption takes place only in the milk sugar. From 2 to 5 per cent of the proteids and fats taken pass through the intestinal canal. In infants fed upon cow's milk the residue is from 1 to 3 per cent greater. In cases of indigestion, the food-residue is first in the proteids, next in the fat, and least in the sugar.

"Two varieties of bacteria—the bacterium lactis aerogenes, and the bacterium coli commune are constantly present in the intestinal tract. Whether these are beneficial or prejudicial to healthy digestion has not been definitely determined."

With the foregoing in view, let us turn our attention to disordered digestion or indigestion in infancy.

Among the many causes of this disorder is over-feeding. The stomach is taxed beyond its capacity. The innocent mother attempts to pour four ounces of milk into her baby, whose stomach can possibly hold but *two* ounces. The attending physician is too often responsible for this, and *his name* might be substituted for the words "over-feeding" in the etiological list. I never have seen indigestion produced by *under-feeding*. (all other things being equal).

On the other hand, I have observed a large per cent of cases of indigestion where *over-feeding* was the sole cause, and many of these, I admit with regret, were among those I did not see in consultation.

The giving of improper food is an important factor in the etiology of indigestion. Undiluted cow's milk, with its firm, coarse, insoluble curd; some farinacious article, any sort of a mixture that will run through the hole in the nipple of a nursing bottle, and which the average infant, that cannot obtain the breast, usually gets in the early days of its existence, will produce indigestion. It is at this period the *harm* is done. The infant spends the remaining part of its career, if it does not die from some intercurrent disease (for which the above named injury is responsible), in the hands of the doctor or proprietary food vender in search of relief. I have emphasized these causes, for the reason, that I believe they are more frequent than is generally supposed; also, because my attention is so often directed to older infants suffering from some chronic disease which had its origin in an acute form of gastric or intestinal indigestion. And I feel confident that these are causes which, in a great measure, can be prevented. I certainly would not fail to mention atmospheric heat, cold, dentition, sudden weaning, the too early giving of solid food, the feeding of unripe fruits (especially to older children) etc. Each might be given an important place in etiology in individual and very obstinate cases of indigestion. Older children who fail to masticate their food, and who swallow their meals hurriedly, bring upon themselves very severe

attacks of indigestion. Oftentimes they stand upon street corners watching parades until their extremities are thoroughly chilled, and thus the "cold" *here contracted* produces indigestion, diarrhea, and even death. And we might enumerate many other causes which are directly or indirectly responsible for indigestion in infancy and childhood. I have been much impressed with the large number of infants born with an *extremely feeble nervous organization*—infants naturally predisposed to disease, in whom indigestion produced convulsions, which, if not resultant in death, induced a permanent derangement of the nervous system. But the two causes which, in my humble judgment, produce more annoyance in early infancy and terminate ultimately in serious secondary gastric and intestinal disorders, are *over-feeding* and *improper feeding*.

I shall not consume any time in enumerating the symptoms, diagnosis, prognosis, etc., but enter at once into the discussion of a means of preventing indigestion, as well as a plan for treatment where the disease is established. It is safe to state that we encounter very few cases of indigestion among babies fed at the breast. Assuming then, that our patients are for the most part among artificially fed or bottle-fed infants, here is where we find a field for the prevention of a disease which is one of the most prolific sources of gastro-intestinal troubles of infancy or childhood—indigestion.

The first step in prophylaxis is to ascertain the weight of the infant and its gastric capacity. Instruct the mother or nurse on this point, and one of the chief obstacles, *too much food*, will be overcome. The second step is the selection of a *proper nourishment*.

It is unnecessary at this time, after what has been accomplished by Rotch, Holt, and their many followers, to enter into detailed reasons why modified cow's milk is the best substitute for mother's milk, especially in the early months of infancy. Although a general rule may be adopted for the modification of milk, the details should be studied in its preparation to meet the requirements indicated by the physical condition and idiosyncracies in each individual case.

A third step, and one of no little importance, is an observance of the proper intervals of feeding. The nurse should be taught the average time required for the stomach to empty itself, and the second meal should not be given before the first is digested.

By an observance of the foregoing, and a careful attention to the cleaning of bottles, nipples, mouth, etc., much may be done to prevent a disturbance of the digestive organs. The best argument against the exclusive use of starchy foods in early infancy, is the total absence of such elements in the food furnished by nature. There is, however, partial development at birth of the organs which take part in the digestion of starchy substances. Therefore, in the modification of milk, especially in individual cases, oat-meal water, or barley water, which contain a minimum proportion of starch, may be used. The above is recommended by Jacobi who claims to have derived excellent results, with no evil consequences.

As soon as digestion is arrested, the contents of the stomach act as a foreign body and an irritation is at once set up. The proteids, instead of being converted into peptones, remain in the form of albumoses, which have been shown, by experiments on animals, to be toxic. The resulting congestion and catarrhal inflammation of the mucous membrane, and the rapid absorption of toxins is soon evidenced by the vomiting, high temperature, circulatory disturbances, diarrhoea with stools containing undigested matter, restlessness, prostration, and other striking symptoms which occur, especially in very young infants.

Washing out the stomach and cleaning out the alimentary tract to rid it of all irritating substances, is the first step indicated in the treatment. The second indication is to insure absolute rest. All food, and especially milk, should be withheld until vomiting ceases. When vomiting subsides, albumen water, made by adding the white of one egg (with brandy and salt) to one pint of boiled water, may be cautiously administered. While drugs are usually of little value, I have observed good effects in twelve cases from the use of tincture of *nux vomica* and arsenite of copper. One-tenth of a drop of the former was given alternately every three hours with one-hundred and fiftieth of a grain of the latter. The patients were from two to six months of age.

The milk diet should not be resumed until the fourth day, or until all symptoms of disease have disappeared. If the symptoms of the intestinal form of indigestion predominate, the stools should be carefully examined from day to day, and the milk withheld until they present a normal appearance. It is in the intestinal variety that we find recurrent attacks, and soon there

are observed symptoms of an alarming nature—symptoms which indicate that structural changes have taken place and some new disease has supervened. An attempt should be made to avoid this by a strict attention to diet. The abdomen and extremities should be kept warm throughout the entire period of the disease. With older children no solid food should be allowed, and even milk during the hot months is contra-indicated until all symptoms have subsided. Barley-water, and the various broths (strained) may be given at regular intervals. In these cases the *nux vomica* and *cuprum arsenite* should be given. Later, when all symptoms have subsided, Pasteurized milk (to which formaline has been added in the proportion of one drop of a 40 per cent solution to the pint) may be given.

In the selection of diet for this class of cases, and especially in the chronic intestinal variety, I have found excellent results from "Panopepton." This is prepared by Fairchild Bros. and Foster, and is a very convenient and acceptable form for administering the nutritious elements of beef and wheat in a soluble and digestable state. It should be diluted with cracked ice, to which may be added champagne, brandy, or some light wine.

In closing, I trust that in the presentation of the foregoing, I may leave the impression that the paramount duty of the physician lies in his efforts, first, to prevent indigestion in infancy and childhood; second, in his awakening to the fact that many obstinate diseases result from indigestion, he may, by a careful understanding of the normal and abnormal conditions, and by a strict adherence to the simple means of treatment, obviate many serious gastro-intestinal troubles which worry the practitioner and bring so much suffering to our little ones.

Indianapolis, Indiana.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, October 10, 1899.

THE PRESIDENT, DR. E. E. GRAHAM, IN THE CHAIR.

DR. F. A. PACKARD presented a case of scurvy and rickets. The patient presented was an undersized colored boy, aged 4 years, who was admitted to the Children's Hospital because of his inability to walk. He was found to be well-nourished and fat but with well-marked stigmata of rickets. The head was large and somewhat bosselated, the epiphyses of the bones of the forearm and of the bones of the lower extremities were greatly enlarged. There was great relaxation of the ligaments of the knees allowing marked lateral motion. A rosary and Harrison's groove were present but not markedly developed. Tenderness was elicited by slight pressure over the lower ends of the femora although there was no evidence of gross subperiosteal hemorrhage. The gums were very spongy and bled on slight pressure and at times spontaneously.

The child had been nursed up to the age of 9 months and then fed upon condensed milk and crackers. It had made no attempt to walk and cried on being held up in the erect position on the floor.

The child had been taking orange-juice for ten days and showed, on presentation, no epiphyseal tenderness, and the gums were firmer and only bled upon pressure.

DISCUSSION.

DR. GRIFFITH.—We all recognize the close association between the two diseases, scurvy and rickets. In fact some writers deny altogether that infantile scurvy is other than a complication of rickets. The two so commonly occur together that this seems at first a justifiable opinion. But a study of cases collectively distinctly proves that scurvy may occur without rick-

ets. I believe them to be entirely distinct diseases, although allied.

DR. McKEE exhibited a case of Scurvy.

No discussion.

DR. F. A. PACKARD exhibited Fluid withdrawn by Lumbar Puncture from a case of Meningitis, probably traumatic.

The fluid shown was withdrawn this afternoon from a case of supposed traumatic meningitis. It looked perfectly clear and limpid as it dropped from the cannula; but by transmitted light there are seen slight turbidity and numerous small specks scattered through it. Most of this fluid has been through a centrifuge so that it does not show by any means as many of these specks as at first. I think this has great significance in diagnosis. At first sight the fluid would be described as clear, yet such is not the condition. My object was only to show the fluid itself in the gross appearance as I hope at a future meeting to make a more detailed report of the bacteriological and chemical findings, as well as to speak of the case. There was an ounce of fluid drawn by lumbar puncture.

DISCUSSION.

DR. ALFRED HAND.—I can bear out what Dr. Packard says as to the fluid not showing the flakes in the bottle as well as in the test tube. In the specimen sent me for examination the flakes look like minute pieces of lymph.

Last summer I obtained a similar fluid in a case of meningitis which finally turned out to be tuberculous. There was a distinct history of trauma the day before the onset of the meningitis. The quantity of fluid obtained was one teaspoonful, and it contained a little blood probably from injury of a superficial blood vessel. No tubercle bacilli were found in it.

DR. PETER exhibited a case of Bell's Palsy accompanied by Herpes Zoster.

The boy is ten years old. Three weeks ago he complained of pain in and about the right ear and right side of face. Three days later there appeared an herpetic eruption along the branches of the facial nerve, back of the ear, over the cheek and especially marked along the lower part of the face. At the same time, the right side of the face was puffy and drooped; the mouth was drawn to the left and he could not close the right eye.

The eruption has almost disappeared but the right side of the face is expressionless, the mouth even at rest is drawn toward the left and he can neither close the right eye nor corrugate the frontalis muscle over the eye. There is evidence of disease of the middle ear and it probably is from the ear disease that the inflammation of the nerve originated.

The feature of interest in the case is the presence of herpes zoster along the branches of an inflamed motor nerve. The eruption is frequently seen in intercostal and trifacial neuralgias and inflammations of other sensory and mixed nerves, but its occurrence along the fibres of a motor nerve has rarely been noted. In a hasty glance through works by Gowers, Sachs and others, I found reference to but one case and that was thought to be a coincidence. Recently, however, several cases have been reported in literature.

Inferences which may be drawn from the case are: first, it probably indicates a rather severe grade of inflammation in the nerve, because herpes zoster is trophic in origin; and second, we may infer that possibly the seventh nerve may contain within its sheath sensory fibres.

DISCUSSION.

DR. PEARCE.—Herpes zoster accompanying inflammation of a motor nerve does not frequently occur, though I am not prepared to say why it should not if trophic function is so disturbed. An interesting case of *tic douloureux* was reported by Dr. John K. Mitchell in which the second division of the fifth nerve had been entirely removed and yet sensation was preserved in the distribution to the face immediately after operation. Dr. Mitchell's surmises were that sensation remaining in such a case as he recorded possibly proved that there were sensory fibres in the seventh nerve. Conversely it is probable that this case may in a measure bear out this observation; some sensory fibres may exist in the seventh nerve.

DR. MCKEE.—It is an unsafe thing to say that any nerve is purely motor or sensory in function. For a long time the optic nerve was regarded as a collection of sensory fibres alone, but it is now known that it contains at least six varieties of fibres, some afferent and some efferent.

The facial nerve in addition to its motor fibres carries secre-

tory fibres, and in the chorda tympani branch, at least, some special sense (taste) fibres are found.

DR. ESINER.—In further support of what both the gentlemen have said, it may be stated that subjective numbness and occasionally actual objective impairment of sensibility are sometimes observed in cases of facial palsy. This may be susceptible of the same explanation as Dr. Peter has given, namely, simultaneous involvement of both the fifth and the seventh nerves, but in view of the statement of Dr. McKee it seems not improbable that certain fibres accompanying the seventh motor nerve may possess sensory functions.

DR. EDSALL.—I was much interested in seeing a paper on this subject of herpes with facial paralysis by Eichhorst in which he described cases under his care, the only ones of the kind he had ever seen. The literature would indicate that it is of rare occurrence, but I have always had a strong suspicion that the people who had the cases did not report them. During the last two years in my own small experience I have seen two such cases. Also in speaking with one or two of my friends I have found this to be their experience. I judge it is much more common than the reports would indicate.

DR. SCHAMBERG.—The pathology of herpes zoster is pretty well known. The lesion is always a neuritis or a ganglionitis. In the case of the trifacial nerve the ganglion involved is the Gasserian ganglion. The trifacial nerve is involved almost exclusively of the cranial nerves. The case under consideration appears to me to be of considerable interest. Herpes zoster associated with facial palsy is uncommon, although a series of such cases has been recently reported in France. I think the sensory fibres have little to do with the condition, it is a question of involvement of the trophic fibres in the nerve trunk. The trophic lesions in herpes zoster vary from a simple erythema which precedes vesiculation to gangrene in some cases. Localized gangrene accompanying herpes zoster is not a rarity. The term herpes zoster applies to all vesicular diseases occurring from nerve inflammation, whether involving the nerves of the trunk or the cranial nerves. We not infrequently observe anesthesia in herpes zoster of the supra-orbital region. The occurrence of paralysis with herpes zoster is not as common as anesthesia.

DR. J. F. SCHAMBERG reported a Clinical Study of the Lymphatic Glands in 100 cases of Scarlet Fever. (See page 191.)

DISCUSSION.

DR. WELCH.—I have listened with much pleasure to this paper of Dr. Schamberg's as I knew he was engaged in the study of the lymphatic glands in scarlet fever and was anxious to learn the result. I had hoped that something more practical would come out of the study.

If, as the result of his investigation, Dr. Schamberg was able to tell us how we could feel sure of the diagnosis in doubtful cases of scarlet fever, a great point would be gained, especially with us in the hospital where we are so frequently called upon to remove scarlatiniform rash cases from the diphtheria wards. If certain glands were found to be invariably enlarged in scarlet fever, mild or severe, the diagnosis would be greatly simplified. I regard, however, Dr. Schamberg's paper as a valuable contribution to the literature of the subject.

DR. D. J. MILTON MILLER.—I remember reading an article in Nothnagle's *Therapie* in which the statement was made that there is more constant enlargement of the inguinal glands in scarlet fever than of the cervical glands. This I think is corroborated by Dr. Schamberg, who found, I believe, 100 per cent involvement of the inguinal glands. The author believed such enlargement to be of some diagnostic value. The statement was also made that Gerhardts says that scarlet fever is, after all, a misnomer;—that what we call scarlet fever represents a group of diseases.

As to the eruptions in diphtheria, it has been my limited experience that the eruptions accompanying diphtheria almost invariably occur in cases in which the streptococcus is present—where we have a mixed infection. I saw this summer a case which brought this fact to my mind forcibly. A child had scarlet fever when two years old very severely. It was taken suddenly sick at the age of 8 with sore throat. There was vomiting and a temperature of $102\frac{1}{2}^{\circ}$. Within 36 hours there was an eruption. The child was brought a distance of 160 miles, and I saw it at the end of the third day. An eruption was present which in every respect resembled that of scarlet fever which faded in four days. At the end of the first week the child had swelling of the wrist joints; a week later it had suppurative otitis that afterward extended to the mastoid. The child did not desquamate except slightly about the finger-tips. The

question arose whether this was a second attack of scarlet fever. The child was not isolated and no one acquired the disease from it. It is my belief that this eruption and the eruptions that accompany diphtheria or severe tonsillitis are due to the presence of the streptococcus,—in other words, that they are septic eruptions.

DR. GRIFFITH.—I suppose that one of the earliest writers upon rubella made the observation that in this disease the glands in the region behind the ear and in the neck were enlarged. Probably every man after that looked for enlargement of those glands in this affection and found it. As a result this was noted in the text-books as a diagnostic sign. If, on the other hand, it was a case of measles the physician did not look for enlargement of the glands and consequently did not find it. It occurred to me some years ago, seeing some rather doubtful cases of measles, that I would look for the enlarged glands in this disease also. I may state that I have found enlargement of the superficial cervical glands about as frequently in this disease as in German measles. Yet very little was said about it in the text-books, and I am convinced that this is because the enlargement has not been sought for. It occurs to me that the same thing may be true of scarlet fever. I confess that I have not sought treatment for general glandular enlargement in this disease, and this is probably the experience of most of us. I believe it is a question whether we do not have in all these affections a tendency to enlargement of the lymphatic glands. Probably it is owing to some effort of nature to remove the poison from the blood. We now know that we have at least four infectious diseases in which there are enlargements of the lymphatic glands, viz., diphtheria, rubeola, rubella, and scarlatina, as Dr. Schamberg has shown. Is it not perhaps a characteristic of infectious diseases rather than any of one infectious disease occurring in childhood? I think, too, that children show a decided tendency to enlargement of lymphatic glands. This is probably generally admitted. I have made a series of examinations of apparently healthy children, and although they did not have enlargement of the glands to such a degree as infectious diseases show, yet there was distinctly a tendency to glandular involvement throughout the body in the average child.

DR. T. S. WESTCOTT.—I think Dr. Schamberg is to be congratulated for so forcibly calling attention to the general en-

largement of lymphatic glands that may be observed in scarlet fever. We have been so used to looking for enlargement of glands in various portions of the body in German measles, especially in the post-cervical chains, in the axillae and in the groins, that we may too readily assume the presence of the milder disease when, with an anomalous rash, there is a decided involvement of the glands in these positions. A marked instance of this came under my observation last spring in a child five years old. The rash was decidedly atypical, not generalized, largely discrete in character resembling closely that of *rötheln*, and in only one place—over the pubes and about the genitalia—did it assume a distinctly erythematous appearance. The enlargement of the post cervical axillary and inguinal glands still further added to the picture of *rötheln*. The attack was quite mild, but on the sixth or seventh day lamellar desquamation took place over the site of the rash about the genitals, and later slight shredding about the finger-nails was noted. Seventeen days later a sister of this child was taken ill, exhibited a much more distinctly scarlatinal rash, with severe cervical adenopathy and otitis media, and had a general desquamation, the hands peeling in great flakes.

In such a case as this, which certainly looked at first like a mild *rötheln*, Dr. Schamberg's careful observations would lead one not to attribute too much importance to general glandular enlargements as weighing against a diagnosis of scarlatina.

DR. ALFRED HAND.—I made one visit to Dr. Westcott's patient while the rash was visible and found it to be most puzzling, because of the poor development of the rash and the absence of constitutional symptoms; it was, however, a suspicious case and I was of the opinion that if desquamation occurred it would be right to call the disease scarlet fever; from Dr. Westcott's description of the desquamation I was of the impression that he considered it *rötheln*, so when, fifteen days later I was called in his absence to see a younger sister of the first patient and found her with a similar rash, measles-like in some areas, scarlatiniform in others, with no constitutional disturbance but with a strawberry tongue, I waited a few days before calling this scarlet fever until a typical desquamation set in; the glands in both of these cases were enlarged, especially the inguinal in the first patient and the cervical in the second; these cases illustrate the difficulty in diagnosis that sometimes arises and I regret that Dr. Schamberg's studies have not had a more positive result.

DR. SCHAMBERG.—I would state that the glands were examined at all stages of the disease, that they diminished in size perceptibly after the first week and at the end of three weeks some of them had almost disappeared, though they werestill palpable. The results of glandular examination do not, I think, warrant the belief that it has any great diagnostic value except within the limitations mentioned. The facts are presented as a slight contribution to the symptomatology of the disease. The differential points ordinarily given between scarlatiniform erythema and scarlet fever, I do not think are of a reliable character. The data of greatest value are the history of the case and the evidences of contagion. Frequently one can get a history of previous attacks in scarlatiniform erythema. There is often too much diagnostic stress laid upon the mere existence of desquamation. The rash of scarlet fever is a dermatitis in the same category and produced in the same manner as the dermatitis produced by the ingestion of quinine. It varies from the slightest sort of erythema to an intense rash accompanied by vesiculation. The greater the amount of vesiculation the greater will be the desquamation.

More important than the existence of desquamation is its persistence, the fact that it will frequently continue for six or seven or eight weeks. Desquamation occurs in many other forms of eruptive diseases. It is often present in scarlatina as a branny scaling, but in severe cases may extend to the exfoliation of large areas of cuticle. The mere existence of desquamation does not decide the question; its character and persistence are of more importance.

DR. A. MARCY, JR., read a paper entitled Autointoxication as a Cause of Cyclic Vomiting in Children.

DISCUSSION.

DR. GRIFFITH.—I am particularly interested in this subject, having seen two of these cases of Dr. Marcy and two others, one of which was as severe as a case can be not to die. There is little that can be added. As Dr. Marcy has said, we do not know what it is. Leyden wrote some years ago of what he called periodical vomiting. All his cases occurred in adults and nearly all were characterized by a great deal of abdominal pain. The disease seemed undoubtedly a pure gastric neurosis. In the case

reported by Dr. Marcy the pain was a minor matter and did not develop until the child had been vomiting quite a long while. I am in doubt whether such cases can be put into the same category with Leyden's. There seems to be a curious inability to trace these attacks to any uniform indiscretion of diet or fault of hygiene. It looks to me as if there was the gradual storing up in the system of some poisonous substance, and that after a while we have an outbreak of this. But this is only supposition, and the disease may be a pure neurosis. I remember having had a talk with Dr. Pepper about one of these cases of Dr. Marcy's. The treatment to prevent further attacks was as uncertain in his mind as in mine. Not knowing what could be the cause it seemed impossible to formulate the proper therapeutic measures.

Sometimes the use of morphia hypodermically seems to be the only course that will do good. In one of the cases I have seen all measures had been unavailing, until, in desperation, the attending physician adopted my advice to narcotize the child in this manner. The good results were immediate and surprising.

A fact which I believe important is that the opening of the bowels is not what cures the disease. The attack being over the vomiting ceases, and the bowels open also. This relief of the obstinate constipation seems to be a result, and not a cause.

DR. MARCY.—In my paper I have not gone into the treatment of this disease, but I have covered the ground pretty well in the management of the cases. Up to the present time I have absolutely found all plans of treatment useless, except hypodermic injections of morphia, atropia and strychnia. I believe the line of treatment along which we will get the best results is the intravenous injection of normal saline solution. Although I believe at the time the vomiting comes on that the poison has been absorbed in the blood and that washing out of the gastro-intestinal tract will not particularly benefit the patient, yet it is possible that if that is the source of the poison there may still be some of it unabsorbed and we will thus get rid of it. Normal salines by intravenous injection will undoubtedly give some results and it will be the line along which I shall pursue treatment in the future. As Dr. Griffith has said about opening the bowels, it is a fact that although they may be opened in the beginning of the attack there comes a time during the attack in which peristalsis is suspended. Peristalsis does not begin and the bowel movements do not occur until after the at-

tack is over. The child ceases to vomit and goes into a deep sleep lasting sometimes many hours. After that time there will come perhaps in two or three hours copious bowel movements and a very free flow of urine. This condition comes distinctly when the attack is over.

BOOK REVIEWS.

DISEASES OF CHILDREN. By George M. Tuttle, M.D. Published by Lea Brothers & Co., Philadelphia and New York. Price \$1.50.

This is the last issued volume in Lea's Series of Pocket Text-Books edited by Dr. Bern B. Gallaudet and published at such reasonable prices. There are nearly 400 pages of text and five excellent colored plates. These last picture clearly Koplik's Spots,—now considered pathognomonic of Measles, Rhachitis, Cretinism, Diphtheria Bacilli versus Streptococci, and the disappearance of diphtheritic membrane under antitoxine treatment. These mere statements indicate how clearly up to date the book has been brought. The whole field of pediatrics has been covered, but of course in a "pocket" volume brevity is necessary.

Accurate statement and useful suggestions, however, characterize each subject discussed, and will, we feel sure, ensure a large sale. Busy men will want it for quick, ready reference, and students because of its brevity and accuracy.

PULMONARY TUBERCULOSIS, ITS MODERN PROPHYLAXIS AND THE TREATMENT IN SPECIAL INSTITUTIONS OR AT HOME. By S. A. Knoff, M.D. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1899. Price \$3.00.

This is the Alvarenga prize essay of the College of Physicians of Philadelphia for 1898, and is illustrated by pictures of the Sanatoria of Europe, the United States and Canada. This indicates that it is a real contribution to medical literature and not an abbreviation or expansion of other medical works. We all of us meet cases of tuberculosis and are confronted by numberless questions. To the answering of many of these this book will contribute much help. The history of the disease, its mortality and curability, its etiology, and the prophylaxis which applies to men and animals, furnish subjects for excellent chapters. And then we come to the treatment and may have the special advantages of various sanatoria and climates, what diets are best un-

der differing conditions, when to use medicines and when rely on pure or medicated air. A multitude of other points are thoughtfully discussed but we cannot take space to even enumerate them here.

The splendid printing and general make-up of the volume surpasses the usual high standard of the publishers in that they have incurred the considerable added expense of marginal paragraph *résumés*.

PROGRESSIVE MEDICINE. Edited by H. A. Hare, M.D. Vols. II and III. Published by Lea Bros. & Co., Philadelphia. 1899.

The two last volumes of this excellent work are devoted to the following subjects: Diseases of the Throat, Heart, Lungs, Blood-vessels, Skin, Nervous System, Obstetrics, Abdominal Surgery, Gynecology, Diseases of the Blood, Glandular and Lymphatic Systems and Ophthalmology.

The articles are well written and contain much that is new and progressive as the title implies. The illustrations are freely used and well selected.

THE TREATMENT OF PELVIC INFLAMMATIONS THROUGH THE VAGINA. By William R. Prior, M.D. Published by W. B. Saunders, Philadelphia. 1899. Price \$2.00.

This valuable little book appeared at the proper time, when the surgical treatment of pelvic inflammations has been so greatly simplified by the use of the vaginal route. Dr. Prior, who is an expert in this particular line, has covered the subject in a masterly way. The book is most readable and to be highly commended.

Saunders' Medical Hand-Atlases:

DISEASES OF THE SKIN. By Prof. Mrazek. Price \$3.50, net.

EXTERNAL DISEASES OF THE EYE. By Prof. O. Haab. Price \$3.00. Published by W. B. Saunders, Philadelphia. 1899.

Both these volumes are beautifully executed and the names of their respective authors are quite enough to secure for them the reputation that they deserve.

Mr. Saunders has rendered the profession a real service in bringing out an English edition of these valuable atlases.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine, and of Clinical Medicine, in the Medico-Chirurgi-

cal College, Philadelphia. Illustrated. Third edition. Revised. 1,300 pages. Cloth, \$5.00 net; sheep or $\frac{1}{2}$ m., \$6.50 net. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899.

Various important additions and alterations have been made in the third edition of this standard work, although the second edition was published only a year ago. These changes are especially noticeable in the section on infectious diseases, in order to keep up with the most modern investigations. The chapter on the Plague has a grim interest, in view of its steady march around the world, and the probability that it may invade this country or some of our new possessions. Luckily the great epidemic in London was in 1685, not in 1865 as stated, one of the few errors found; another being the use of *per oram* instead of *per os*, pp. 117 and 161. The great epidemic of cholera in Hamburg was also later than 1872. The long list of the subjects introduced or revised shows how careful the author has been to make his work comprehensive and up to date. Comparison with works published only a few years ago shows the enormous recent progress of scientific medicine. The bacteriological plates, especially the illustrations of the parasites of malarial fever and leucaemia, are beautiful and instructive. The classification is clear, the description lucid, the therapeutics safe and judicious. The paper and print and all the mechanical features of the book are in accordance with the high reputation of the publishers. Altogether it is a good book to own and to read, not merely for the student but for the older practitioner, who like the writer sometimes finds that his knowledge is not quite up to date.

THE HYGIENE OF THE MOUTH. By R. Denison Pedley, Dental Surgeon to the Evelina Hospital for Sick Children, London. With numerous illustrations. Published by the S. S. White Dental Mfg. Co., Chestnut Street, Philadelphia.

We are very glad indeed to commend the wisdom of the publishers in giving to the American profession this volume which has for some months been in the hands of our English brethren. The matter of the prevention and control of dental diseases is one much neglected among us. Indeed few physicians seem to realize that the decay of the teeth is an important cause of many diseased conditions. The book is not an extended technical treatise but a simple, practical discussion of the conditions so often found, specially in children. The illustrations are excellent and there are a number of reports of cases which clearly prove the dependence of general health upon a well-cared-for mouth.

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ORIGINAL COMMUNICATIONS

EXPERIENCE IN OPERATIONS FOR TYPHOID PERFORATION.*

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It is claimed that we have fifty thousand deaths† from typhoid fever in the United States each year. ‡In Philadelphia in the first three months of 1898, one thousand seven hundred and thirteen deaths occurred from typhoid fever, and in the same city in 1899, up to March 13th, there were three hundred and sixty deaths from the same cause.§ *†In our recent war with Spain and the Philippines there were 202 deaths from bullets, 216 from accidents and 2,774 from typhoid fever.

*‡It is further claimed that one-third of the deaths from typhoid fever are due to perforation. One-third of fifty thousand is sixteen thousand six hundred and sixty-six. Typhoid perforation is credited then with a mortality of sixteen thousand six hundred and sixty-six each year in the United States.

*Read before the Southern Surgical and Gynecological Association, December 6, 1899.

†Pediatrics, N. Y.

‡Hare, Medical Complications and Sequelæ of Typhoid Fever, p. 23.

§Seventy-five thousand according to the census 1896. Hirth, Med. Times, June, 1898.

*†Surg. Genl. Sternberg's report, ending June, 1899.

*‡Editorial Medical News, November 11, 1899.

One-third of one thousand seven hundred and thirteen, the number of deaths from typhoid fever credited to Philadelphia in three months of 1898, is five hundred and seventy-one; while one-third of three hundred and sixty, the deaths recorded to March 13, 1899, is one hundred and twenty. Is it credible that one city can have had five hundred and seventy-one deaths from perforation in three months in 1898 and one hundred and twenty from the same cause in three months of 1899?

One-third of two thousand seven hundred and seventy-four, the number of soldiers who died in the war with Spain and the Philippines, is nine hundred and twenty-four. It is possible that four times as many of our troops died from typhoid perforations as from bullet wounds? Is it within the province of medicine or surgery to lessen this great mortality? Few we think who have seen the virulent intra-peritoneal infection incident to a typhoid perforation, will expect a mortality of less than one hundred per cent in the cases treated medically. Surgical intervention, on the other hand, has saved more than one-fourth of the cases operated on (twenty-seven per cent), and we should recall the fact that many of the operations, as was the case with several of my own, were not performed until the patients were in extremis and in some instances the operation was done prior to the improvements in the technique of abdominal surgery.

One-fourth of sixteen thousand six hundred and sixty-six is four thousand one hundred and sixty-six. If these statistics are even approximately correct, and if surgical intervention is indicated in all typhoid perforations, we have sixteen thousand six hundred and sixty-six cases in the United States each year upon which we should operate, and even if our successes in the future are no greater than they have been in the past, we should save one-fourth of sixteen thousand six hundred and sixty-six, or four thousand one hundred and sixty-six lives each year. We may claim that the surgical world is just beginning its investigation as to the possibilities of surgery in this field and we share the convictions of those who claim *"When every case of intestinal perforation (except the moribund) is operated upon within twenty-four hours, we shall save at least one-third of the cases and possibly more." It would seem a settled fact that the typhoid perforation is, in every instance, essentially a surgical

*Keen, Surg. of Typhoid Fever, p. 319.

complication, and equally so, certainly in the incipiency of its existence, a legitimate field for operative intervention. There is nothing to justify the hope that recovery is possible through any resources other than those essentially surgical.

It is true, in exceptional instances, recovery has been claimed to have occurred spontaneously.† Murchison estimates a mortality of ninety-five per cent in those cases "in which general peritonitis supervenes." ‡We believe that cases supposed to have recovered after perforation without operation were mistaken diagnosis, probably a localized peritonitis incident to ulceration without perforation. We grant that very exceptionally a small bullet wound of the intestine may be plugged by a protrusion of intestinal mucosa or sealed by prompt adhesion to some healthy peritoneal surface, but the typhoid perforations that we have seen have been ugly looking lesions. The mucous and muscular coats are destroyed over a wide area, the surrounding intestinal wall is thickened, indurated and friable, and there is, to my mind, nothing which is likely to occur to prevent the escape of the always fluid fecal contents of the ileum into the peritoneal cavity.

The specialist in surgery appreciates what surgery can do and has done in the treatment of typhoid perforations. The general practitioner into whose hands these cases commonly first fall, is not so well informed, and this Society should express its convictions in no uncertain sound.

*It is claimed that one-fifth of the deaths from typhoid fever are due to hemorrhage. One-fifth of fifty thousand is ten thousand. Obviously if we know that patient is doomed to bleed to death, it is our duty to open the abdomen and ligate the feeding vessel in the mesentery, or even to excise the bleeding surface. We do not know that the abdomen has in any instance been opened with the purpose of checking hemorrhage from a typhoid ulceration. †Dr. Keen impresses the difficulty which would attend the locating of the bleeding point, the frequency with which patients recover after profuse hemorrhage, and advises against an operation.

†Keen, *Surg. of Typhoid Fever*, p. 218.

‡Also opinion of Hare, of Philadelphia, *Complications and Sequelæ of Typhoid Fever*, p. 135.

**Medical News*, November 11, 1899.

†*Surg. of Typhoid Fever*, p. 209.

If it is true that we have ten thousand deaths a year from intestinal hemorrhage of typhoid fever and that these are cases which have not yielded to nature's potent hemostatic syncope, or to such questionable remedial measures as opium, ergot, tannic acid, etc., it does seem that this large number of cases should in some way be brought within the province of justifiable surgery. It would seem just as unsurgical to let those patients die without an effort to save them, as it would be in the case of profuse hemorrhage from a gastric or duodenal ulcer, or even a ruptured tubal gestation.

But I am reminded that the literature of this whole subject is quite recent and is more familiar to the members of this Society than to myself, and therefore even a brief résumé of it would be inappropriate.

The purpose of this paper is simply to submit a synopsis of my cases and the lesson they should impart. In detailing these cases, I am conscious that I have reiterated symptoms to an unwarranted extent. My excuse is my appreciation of the fact that in this, as in so many phases of abdominal surgery, we need proficiency in diagnosis far more than an improved operative technique.

CASE I.—A young man, convalescing from a mild, but typical spell of typhoid fever, was taken in the night with sharp abdominal pain, rigors and vomiting. Recognizing evidences of perforation, I advised an early operation. This was declined until the fourth day, by which time the patient was in extremis. On opening the abdomen, I found the pelvis roofed off from the general peritoneal cavity by matted bowel. Upon separating adhesions, we found the pelvis full of fluid fecal matter, bloody serum, pus, etc. While in the ileum, near the cæcum, there was a great sloughing rent. The condition of the patient was so unfavorable that we felt we were not warranted in doing more than emptying the pelvis and providing for the drainage. The patient died in six or eight hours. This case is interesting because it presented initiatory symptoms, which left no doubt as to the nature of the complication and also because it showed what nature, even when handicapped by the depression of typhoid fever, can do in the matter of walling in the focus of infection.

By a curious coincidence a young woman, a next-door neighbor of this patient, was soon afterwards afflicted with typhoid

fever. Knowing of her neighbor's death, and its cause, she made her husband promise that she should not be operated upon. In the second week of her sickness, she presented classic symptoms of perforation. An operation was advised by myself and her attending physician,* but this young wife and mother was allowed to die without the possible benefits incident to surgical intervention.

CASE II.—A second case was not seen until the fourth day after the onset of symptoms of perforation. At that time the distended abdomen, feeble, rapid pulse, and gulping vomiting stamped the existence of acute sepsis. A section revealed general suppurative peritonitis with fluid fecal matter and inflammatory products in the cavity and two perforations of the ileum about eighteen inches from the ileo-cæcal junction. The perforations were sutured, the abdomen cleansed, and multiple drainage provided, but this patient died in eight or ten hours. We were informed by his brother (a doctor) that the early symptoms of perforation were characteristic and a surgeon was promptly called, but for some reason he advised against an operation.† The case is a confirmation of the fact that nature gives us as much time to deal with infection from typhoid perforation as from a duodenal, an anterior gastric, or bile tract ulceration, or even an acute appendicial infection. It also confirms the common experience that the late operation in all such cases is forlorn surgery.

CASE III.—My next experience repaid me for my previous disappointments. The occurrence of perforation was promptly diagnosed, a successful operation was performed, the fourteenth recovery was recorded, and I now experience intense satisfaction when I see this happy little boy playing on the streets of Richmond. This child, aged about seven years, had been sick with atypical typhoid fever for six weeks. At no time was he seriously sick, and at no time were there either extreme cerebral or abdominal symptoms. The patient was reported to have passed a comfortable night, but awoke complaining of some pain in his abdomen. His mother, thinking he needed it, gave him a teaspoonful of syrup of figs. This, however, was promptly vomited,

*Dr. Edward McGuire.

†Dr. Virginius Harrison saw him on the 4th day, and I then saw him in consultation.

and several times during the next few hours spells of vomiting occurred. One more attack of sharp pain, which lasted only a short time was experienced, and after that he insisted that he was all right and had no pain. This was the report given me four hours after the first attack of pain. While the symptoms were strongly suggestive of perforation, the child did not look sick enough at that time to justify such a suspicion. There was no evidence of shock, and those who saw him at the onset of the sharp attack could not say that he was at any time shocked. His pulse was 115, sublingual temperature 101° , respiration was not noticeably thoracic and his morale was exceptionally good. There was some appreciable rigidity, but there was no distension and no hepatic resonance. An absence of fever for several days, the sudden onset of pain, and vomiting, the recurrence of fever with rapid pulse plus the abdominal rigidity and abolished peristalsis, was the group of symptoms which warranted the diagnosis of perforation. Per contra was the sharp attack of pain, peristalsis incident to a bowel movement? Was the bowel movement due to acute indigestion and dose of syrup of figs? Was the fever and increased pulse-rate a product of ptomain production within the intact intestinal tract? Was the muscular rigidity voluntary contraction incident to the fear of pain, or pain from an irritated peritoneum? It is common experience in typhoid fever to have pain without perforation; tenderness on pressure, notably in the right iliac region can, as a rule, be induced, while marked tympanitis occurs in about eleven per cent of cases. Twelve hours from the onset of the alarming symptoms there were unmistakable evidences of serious intra-abdominal trouble. While his pulse had increased to 140° , his rectal temperature had reduced to 100.5° . While his abdomen was not painful nor markedly tympanitic, it was rigid and there was no appreciable movement of gas within the intestines.

I incised over the cæcal region because of the known fact that a large majority of typhoid perforations are found in the ileum within eighteen inches of the ileo-cæcal junction. On incising the peritoneum a quantity of sero-purulent fluid escaped from the peritoneal cavity, but no gas. The cæcum was delivered and not more than twelve inches of the small bowel was examined before a single perforation as large as a silver probe was discovered. It occupied the free margin of the bowel. But thirty

minutes was needed to open the abdomen, find and suture the perforation, irrigate the cavity, wipe the intestines of inflammatory deposit, provide for drainage, etc. This fact is mentioned more as an illustration that in some instances this operation may be very simple.

CASE IV.—My fourth case was that of a young man who had been sick in the Virginia Hospital for several weeks. For the last week of his sickness his case had been complicated by retention of urine induced by a specific urethritis, contracted just before he was taken sick with fever. For a week it was necessary to catheterize him at regular intervals. At 10 A.M. he was doing well—pulse 108, temperature 104° , no pain, no abdominal distention, morale good. At 10.30 A.M. he had a movement from his bowels and passed his water for the first time in a week. Immediately he complained of sharp abdominal pain diffused over the whole abdomen. I saw him two hours later. An anxious expression, thoracic breathing, and clammy skin were noticeable; his abdomen was flat but rigid; his pulse 130 and temperature 105° , and there was absolute cessation of peristalsis. This last symptom was carefully investigated by myself and colleague by placing first the ear and then a phonendoscope over every part of the abdomen. Thoracic breathing, a rigid abdomen, absence of peristalsis, and increased pulse-rate were the evidences which warranted an immediate celiotomy. There was no appreciable shock; no abdominal distention; no lessening pulse-rate, or reduction of temperature. In four hours from the onset of symptoms, I made a median section. On incising the peritoneum, a quantity of bile-colored serum and fluid feces escaped, but no gas. On delivering the cæcum and last part of the ileum, two large perforations were found within twelve inches of the ileo-cæcal junction. The perforations were about four inches apart; both involved the free margin of the bowel, and both were ugly looking lesions. For some distance around the larger, the tissues were thickened and indurated to such an extent that a resection was seriously considered. Both lesions, however, were closed by deep and superficial sutures. Prolonged irrigation, washing and wiping of intestines and cavity were practiced. Even in this short time—four hours—membranous flakes were deposited around and near the bowel perforation. Multiple gauze drains were used. Although not more than fifty

minutes were occupied in completing the operation, the patient reacted badly, and two quarts or more of hot saline solution were administered under the skin and hot coffee and whiskey by the rectum, together with morphine, strychnia, digitalis, camphor, etc., hypodermically. During this condition of shock, he perspired profusely. Six hours after the operation, the house surgeon reported that he had used the catheter, but found the bladder practically empty. In the nine hours the patient lived, not more than a few teaspoonfuls of urine were secreted. As far as I can tell, the patient died from suppression of urine, a post operative sequence and aggravated possibly by acute gonorrhœal infection. A post-mortem found the peritoneal cavity practically dry and no increased evidence of peritonitis. The result of this case was a disappointment, as operative intervention was undertaken within four hours from the first onset of symptoms, and I counted myself as being particularly fortunate in getting into the abdomen early, and equally so in completing the operation in a reasonably short time. I was not at that time aware of the fact that better results have been obtained from operations performed about the twelfth hour after perforation, presumably after the reaction from shock of perforation and prior to the occurrence of shock of sepsis.

CASE V.*—My fifth case is interesting from the fact that the initial symptoms of pain, shock, distension, vomiting, muscular rigidity, and abolished peristalsis were marked and perforation was at once recognized by his attending physician. This man had been sick with fever at his home for about three weeks. He was moved to a hospital and the symptoms of perforation were manifested while he was being moved or certainly very soon after reaching the hospital. I did not see him for twenty-four hours after the onset of acute symptoms. At that time persistent hiccough, vomiting, shock, rigid and distended abdomen, reduced temperature, rapid pulse and absent peristalsis were significant symptoms of gross intra-peritoneal infection. On incising the peritoneum, a considerable quantity of gas escaped.

This was one of the few instances in my experience in which any quantity of gas was noticed in the peritoneal cavity, a sequence of hollow visceral wound. Two perforations involving the free margin of the ileum within two or three inches of each

*Seen in consultation with Dr. Barksdale.

other and within fifteen or twenty inches of the ileo-cæcal junction were found. In this, as in all the cases operated upon, deep and superficial mattress silk sutures were used. In our desire to get the abdomen clean, I think we did too much. The cavity contained a quantity of sero-purulent fluid, intestinal contents, and the evidences of fibrino suppurative peritonitis were generally distributed. The peritoneal cavity was washed out with a fifty per cent solution of peroxide of hydrogen and finally with a liberal quantity of saline solution. The intestines were carefully wiped and multiple drainage provided. This patient practically died on the table, as he did not live more than an hour after the operation was completed. This patient was operated upon twenty-four hours after the onset of symptoms of perforation.

The gross intra-peritoneal lesions and the profound toxæmia is an illustration of what may be expected in delayed operative intervention, and is a confirmation of the opinion that after twenty-four hours an operation will rarely be successful.

It is claimed by Van Houk "that the only contra-indication to operative intervention is a moribund condition of the patient." "The difficulty is in deciding when the patient is moribund." An improved technique now removes from the moribund class in the past many cases of hollow visceral lesions and infections, and places them within the limit of successful surgery of today. Very recently we witnessed a post-mortem after a death from typhoid perforation which impressed the conviction that in some cases operation must be forlorn surgery, no matter how soon we operate. This post-mortem revealed general matting of bowels, fecal fluid matter, and inflammatory debris in the abdomen. Two complete perforations and a dozen or more with only a friable peritoneal investment intact. Simply wiping away the lymph to see if the perforations were complete, was sufficient in many instances to make them complete. Nothing short of a resection of several feet of intestine could have saved the patient. It looks like desperate surgery to subject to a celiotomy the cadaverous-looking patient, who has been ill with typhoid fever for weeks. Granting that it is formidable surgery, the results have answered in the affirmative, that operative intervention is indicated in all cases.

Less than two hundred cases in all have been operated upon. Recall the thousands of cases annually occurring and the need

for coöperative study is apparent. Nothing short of a moribund condition should warrant us in abandoning the case as hopeless. The key to success is an early operation. In the infancy of our work, we have saved more than one-fourth of the cases operated upon. We should save more than 33 1-3 per cent by a timely operation. And even as to the seemingly moribund, as they are inevitably doomed without an operation, our convictions are well expressed by Greig Smith when he wrote, "At the worst, happen what may, the patient can be in no more deplorable condition than before the operative interference was carried out, and I would plead for an attempt to reduce a mortality of one hundred per cent."*

Richmond, Va.

BEEF-GALL ENEMATA IN THE TREATMENT OF POST-OPERATIVE OBSTINATE CONSTIPA- TION AND INTESTINAL OBSTRU- TION.†

F. C. AMEISS, M.D.

WHENEVER an anæsthetic has been administered for a surgical operation, especially when complete anæsthesia was needed, the surgeon always highly appreciates the first thorough bowel action, for he knows that the paralyzing effect of the anæsthetic on the intestinal tract may be the cause of a fatal termination. Particularly have I reference to the operation of abdominal section, but even in general gynecological and surgical procedures, requiring anæsthesia, the first post-operative intestinal evacuation is of great importance. Aside from the anæsthetic effect, there are many others which must be considered. The shock of a severe operation, septic infection, or injury to the nerve-supply of the muscular coat of the intestine may induce paralysis of peristaltic movement and thus cause intestinal obstruction (Rohe, Amer. Jour. Obstet., October, 1894). Additional causes, of a mechanical nature, according to the authority just cited, are

*Abdominal Surgery, Vol. II., p. 783.

†Read before the Southern Surgical and Gynecological Association at Atlanta, Ga., Dec. 6, 1899.

adhesions, peritoneal bands, volvulus, accidental fixations by sutures, etc.

Permit me, gentlemen, to present my usual method of obtaining a movement from the bowels after, for example, an ovariectomy. On the beginning of the third day, an enema of one pint of warm water with soapsuds and four ounces of olive oil is ordered to be given with the long rectal tube. If no evacuation results within four hours, the enema is to be repeated, replacing the olive oil with four ounces of glycerine, administering at the same time, per os, one drachm of magnesia sulphate in the juice of one lemon and six ounces of water. When tympanitis is present, I usually order an enema of half an ounce of turpentine, four ounces of olive oil, and one pint of warm water. If not effectual, the above dose of magnesia sulphate is to be repeated every three hours, for three or four doses, discontinuing the enemata. When vomiting coexists, calomel, in one-quarter grain doses, given every hour, until eight or ten doses are administered, frequently both checks vomiting and produces purgation. When these simple means have failed, enemata of eight ounces of beef-gall and eight ounces of water have, in the case of several of my patients, saved re-opening the abdomen which, generally, gives but a desperate chance for recovery. In a recent operation for partial intestinal obstruction, I found, on opening the abdomen, the intestine looped doubly and intimately adherent to a pelvic exudate. The tubes, ovaries, and uterus seemed normal in size and appearance. I detached the bowel adhesions and sewed up the abdominal wound. The patient vomited twice from the chloroform and seemed to do well on the second day, but forty-eight hours after the operation I found her vomiting fecal matter, with a pulse of 56 and a temperature of 97° . A hypodermic of strychnia nitras, gr. 1-30, was administered immediately, and eight ounces each of ox-gall and warm water injected high up into the rectum. This caused a small evacuation and cessation of vomiting, which, however, returned during the night (the enema having been given at eight o'clock in the evening), and the next morning I found her in *statu quo*, pulse 62, temperature 97° , listless, abdomen tympanitic, and vomiting stercoraceous matter. I again ordered strychnia, gr. 1-30, hypodermically every four hours, and administered, personally, the high enema of beef-gall and warm

water, each eight ounces. I found that the rectal tube doubled upon itself about five inches above the anus, but after repeated trials, I introduced it eleven inches and obtained within half an hour a free passage of flatus, with a good fecal movement. The vomiting ceased at once and the patient's features cleared up, and I felt satisfied that the worst was over. I was obliged to continue the ox-gall enemata for three weeks, giving an enema of six ounces of ox-gall and water every second or third day. I tried less ox-gall, but ineffectually.

This patient was placed under antisyphilitic treatment and was kept under observation for six weeks after the operation, during which time she improved in every way. The pelvic exudate diminished considerably and no intestinal constipation recurred, and I have heard since that she has entirely convalesced.

This is the only case the writer ever saw which recovered in which genuine fecal vomiting was present.

I take it that the pre-operative symptoms of intestinal obstruction were caused by the peculiar bowel adhesions, almost obliterating the lumen of the gut, and that the post-operative symptoms were due to the attempt of re-attachment of the separated raw surfaces to the same sites from which they had been detached, which must have been prevented by the peculiar action and property of the ox-gall.

The treatment of intestinal obstruction by beef-gall enemata was first introduced to my notice by an article of Dr. Tuholske, read before this Association at St. Louis, two years ago (*South-ern Surgical and Gynecological Transactions*, Vol. X., p. 211). He emphasized its efficiency, which induced me to give it a trial as soon as occasion would offer, particularly as I, at the time, had had a death caused by intestinal obstruction, following the removal of an ovarian cyst. Having used beef-gall in four cases, I now believe that with its use I would have certainly saved that patient's life. And you all know what regretful moments these fretful thoughts bring forth during a worrying night's repose. Permit me, therefore, gentlemen, to record this case, which I hardly consider a very agreeable duty; for we all, naturally, prefer to present our successful operations. The tumor, removed from a healthy woman fifty-three years of age, was a left multi-locular ovarian cystoma, weighing from ten to twelve pounds

It was an easy operation, without any complications whatsoever. The small, thin pedicle, after ligating and cutting it off, gave a raw surface of not more than three quarters of a square inch in area, and to it the death of my patient is to be accredited. I dropped this pedicle stump into the pelvic cavity, without first having sewed it over with peritoneum, a procedure which many an operator fails to do, particularly with so small a raw surface. I shall in future always cover the stump, whenever possible, even if the cut surface seems yet so insignificant.

The patient did well until the fourth day after operating, when a slight chill occurred. The temperature now was 101° , pulse 98. Her bowels had been moved the day before by an enema of glycerine and water, and she had passed flatus quite freely for several days. She complained of no pain at all, but some tympanitis could be elicited through the abdominal dressing. A bottle of citrate of magnesia was ordered, which produced slight and frequent actions. The temperature dropped to 99.45° by evening of this day, and did not rise above 100° until the afternoon of the fifth day, when temperature and pulse began to increase. At 6. P.M. the temperature rose to 101° and the pulse to 120. Slight regurgitation of "hot, sour water," as the patient expressed it, was first noted at this time. Desiring to check the irritability of the stomach and to thoroughly evacuate the bowels, one-quarter grain doses of calomel were administered hourly, but with no effect. High enemata of turpentine, oil, and warm water brought away some flatus, but gave no relief otherwise. By the next, the sixth day, stercoraceous vomiting set in, and it was decided to re-open the abdomen. I expected to find pus in the pelvis, considering the case one of insidious septicemia (Engelmann, *Gyn. Transact.* Vol. XX., 1884), but Dr. Dorsett, who was the consultant in the case, and who rendered valuable aid at both operations, concurred not in this opinion, stating that he expected to find no pus, but intestinal adhesions only. In explanation of his views, he referred to a case of vaginal hysterectomy in which, with almost the identical symptoms of my case, extensive bowel adhesions were discovered at the post-mortem.

On re-opening the lower angle of the abdominal incision and exploring the pelvic cavity, a loop of gut was found adherent to the stump of the pedicle which was separated, the cavity irrigated

(as there was some bleeding), a drainage tube inserted, and the wound again closed. No other pathological conditions were discoverable.

The patient rallied poorly and needed hypodermics of strychnia and digitalis to prevent complete collapse; but finally the pulse again developed force, became regular and stronger, and hope once more dawned, but only for a couple of hours, when one could see that death would soon end the struggle.

A post-mortem was obtained, which plainly showed the former site of adhesion of intestine to the stump of the pedicle. A portion of ilium, flexed doubly upon itself, was resting on the stump, and the serous layer of the gut showed distinctly the site where the adhesions had been separated. No other abnormal or pathological condition was found; no peritonitis and no septic infection was demonstrable.

Had I given this woman a beef-gall enema at the stage when the vomiting set in, I believe that it would have effectually moved her bowels and thus prevented the fatal result.

When a diagnosis of post-operative intestinal obstruction is made, re-opening of the abdomen is considered the only proper treatment, but nevertheless there are cases in which, on account of the general condition of the patient, the great shock of the primary operation, or accompanying complicating diseases (as a case of mine with chronic nephritis), the secondary operation cannot be performed. And in just such a case I had a satisfactory result with ox-gall. This case, complicated with morbus Brightii, was operated for an ovarian cyst which was adherent to the uterus, omentum, and bowel. Suspecting that the gut might again become adherent to some of the denuded surfaces, I began early, thirty-six hours after operating, to get a movement from the bowels; when the glycerine enema and salts, per os, failed to act, I ordered a gall injection with good results. Whenever numerous adhesions have been separated, the early resort to means for evacuating the bowels (which will cause free intestinal peristaltic movements), I believe, will frequently prove the factor in avoiding serious consequences. My third case, amputation of the cervix uteri and perineorrhaphy, for years chronically constipated, reacted not, post-operationem, to her usually effectual enemata, but responded well to ox-gall. In the fourth case, from which a large fibro-cyst of the uterus was removed, no

action resulted from the bile enemata, and here the autopsy gave purulent peritonitis.

There are certainly a great number of cases in which nothing but operative interference can give relief. The mentioned case of peritonitis, if re-opened in time, might have been saved. When a loop of gut is accidentally ligated, release of the ligature only can prove effectual. In such and similar cases, the second section must be considered the only correct treatment. As we, however, do not know what we will find on re-opening the abdomen, the ox-gall enema may generally be given a trial before resorting to the knife.

Of course, I recognize that four cases are insufficient in number to form a basis for extensive or dogmatic conclusions, but it is nevertheless a fact that very beneficial results were attained when the opposite was expected.

The bile I used in my cases was fresh from the slaughter house, in several instances still possessing the body-warmth of the animal. I have used bile two or three days old which acted well, but it was darker and thicker in consistency than the fresh, and I suspect that age may deteriorate it, as the always present ingredient, mucus, decomposes very readily.

The physiological action of a beef-gall enema is very likely similar to that of the bile secreted in the human body. Landois, in his Text Book of Human Physiology, considers bile a natural purgative, causing intestinal peristalsis by exciting contractions of the muscular coats of the intestine. He claims it to be a good antiseptic, diminishing putrefactive decomposition of the intestinal contents, probably the explanation for the instant reduction of tympanitis which was observed in two of my cases.

That beef bile, used per enema, has the special property of insinuating itself in the narrow spaces of the intestinal tract and travelling upwards (termed anti-peristalsis by Tuholske), is claimed by some, but aside from the local, mechanical effect, there very likely is one brought about by the absorption of the bile salts, taurocholate and glycocholate of sodium, which are said by the physiologist, Paschki, to be the main exciters of prompt and distinct cholagogue action.

Searching the literature on ox-gall, one will recognize it as a remedy of considerable antiquity. But as to its administration, per enema, very little has been written. Only one reference

to the subject matter of this paper have I been able to find in my reading. Dr. Alnate, in the London Lancet, writes: "In all cases of incipient constipation, administered in the form of enemata, ox-gall is a remedy of undoubted efficacy; and even in protracted cases, where hope has almost fled, but where evidences of strangulation are not unequivocally manifested, it should never be omitted." A teaching to which I emphatically subscribe.

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TWO CASES OF VESICO-VAGINAL FISTULA.

JOHN O. POLAK, B.S.C., M.D.

IN making the following report, in the first case the writer endeavors to illustrate what may be accomplished in the closure of large vesico-vaginal fistulæ by utilizing the adjacent structures, yet preserving the general position and functions of the pelvic organs.

In the second case, to which I will make reference, the reparative powers of nature should have full credit. While neither of these injuries can properly be classed as unique, except perhaps as to the extent of the vesical damage, the methods employed for their closure may claim some originality.

CASE I.—Mrs. W., aged 30 years, the mother of five children, all difficult births. Her fifth pregnancy was terminated with forceps (February, 1897) after a dry labor of some twenty hours. I am indebted to the attending physician for an account of the details of the accouchement. The head, after entering the brim as an occipito-posterior, was arrested in its progress and resisted repeated attempts at delivery with the forceps; six applications, all ineffectual, were made by four different physicians. Finally, after diminishing the size of the child's head by cranial puncture, the forceps were applied for the seventh time and delivery accomplished. After the placenta was expressed, the anterior lip of the cervix was found hanging without the vulva, attached to the uterus by only a thin shred of mucous membrane, and was cut away; little or no hemorrhage followed. The many attempts with the forceps had caused a complete laceration of the pelvic

floor, involving the sphincter and an inch and a half of the recto-vaginal wall, which was not repaired, owing to the unfavorable surroundings and lack of proper suture material. On the second day after labor it was noticed that urine and feces passed via the vagina, and within a week the entire base and a part of the neck of the bladder had sloughed away, leaving a vesico-vaginal opening which extended from an inch and an eighth posterior to the meatus to the utero-vaginal junction; the width included the entire anterior vaginal wall.

About eight weeks after her confinement the patient came under the writer's care. At this time the ureteral orifices were inverted and discharged urine directly into the vagina. The vesical mucous membrane was prolapsed for the full length of the fistula, and the bladder so contracted that the mucosa of the fundus presented through the vaginal wound. The injury to the sphincter, levator, and rectal wall has already been described. The uterus was large and soft, having no vaginal cervix, save a posterior fragment not larger than the tip of one's little finger. Satisfactory repair of an injury so extensive, owing to the destruction of tissue, seemed out of the question without turning the uterus into the wound, a procedure which the writer desired particularly to avoid. Hence, the patient was told that she would have to undergo a series of plastic operations at different sittings in order to restore the continuity of structure. This she consented to, and on April 26th, 1897, under ether narcosis, the parts having been previously sterilized, an incision was made along the vesico-vaginal margin and the bladder dissected from its vaginal and uterine attachments; considerable difficulty was experienced in separating the vesico-uterine adhesions, owing to the extensive formation of scar tissue at this point. Having freed the bladder in this way and denuded the edges of the muscularis, the vesical wound was closed with interrupted sutures of chromicized catgut. In order to secure better support for my vesical wound it was thought wise to reinforce it by a union of the vaginal mucous membrane in the line of injury. This was accomplished in the following manner: Two incisions were made through the vaginal mucous membrane parallel to the axis of the vagina, about an inch from each lateral margin of the fistula, thus marking out two flaps of mucous membrane, which were freed from the underlying structures and brought over the vesi-

cal wound in the median line and united with sutures of fine silkworm gut, leaving an area on each side of the vagina denuded of mucous membrane. Even by this transplantation of mucous membrane, the upper angle of the fistula could not be satisfactorily closed. The operation was well borne, and a retention catheter kept the bladder drained during the first six days without setting up any local disturbance.

At the end of two weeks, the wound having healed per primam, except at its uppermost angle, already referred to, the patient was able to retain her urine, without leakage, in the sitting posture, for from one to one and one-half hours; but on lying down, the urine ran freely into the vagina. The patient was discharged in four weeks. Three months later she returned to me to have the work completed. An opening the size of a penny remained, just anterior to the utero-vaginal junction, through which the urine escaped, causing a troublesome dermatitis of the vulva and inner surface of the thighs. The patient was put under ether, and the torn edges of the bladder separated by tedious dissection from their anterior uterine attachments; the amount of cicatricial tissue necessitated the cutting away of considerable muscularis and submucosa; the denuded edges were then brought together and sutured with fine chromicized catgut. In order to do this part of the operation a semi-circular incision had been carried through the mucous membrane around the uterus anteriorly at the utero-vaginal junction, including the fistula. This incision was now carried around the uterus posteriorly, at the same level as in vaginal hysterectomy. I next made three incisions at right angles to this circle, one into each lateral fornix and one running back for an inch and a quarter toward the sacrum. The uterus was then pulled down and freed in all direction, by blunt dissection, then carried backward and attached to the posterior angle of the posterior incision, anteverting the uterus; while the cervix, or what was left of it, occupied a position in the posterior fornix. We next carefully approximated the vaginal mucous membrane to the cervix in its new position; having sufficient mucous membrane anteriorly to close over the vesical wound, these flaps were united in the median line and to the uterus with interrupted sutures of silkworm gut. Primary union followed. Upon dismissal, the patient could hold her urine for from four to six hours; the sphincteric control was perfect.

CASE II.—A single woman, aged 44 years, had had her uterus removed by vaginal hysterectomy for a fibro-myoma in the fall of 1898. A large nodule on the anterior wall protruded well into the anterior fornix, the growth was so large and anteverted the uterus to such a degree as to inconvenience and embarrass the operator in separating the uterus from its bladder attachments. During his dissection he opened into the bladder with the scissors for a distance of some two and one-half inches, the incision being just above the base and extending into the fundus. Owing to the bladder being empty at the time of operation, the injury passed unrecognized, so no attempt was made to suture the rent. The hysterectomy wound in the vault of the vagina was tightly packed with gauze for hemostasis, and the patient placed in bed. A urinous odor was detected the next day, but as there was sufficient urine withdrawn by the catheter the true condition went unnoticed until the gauze packing was removed from the vagina; from this time no urine passed via the urethra. The patient was referred to the writer for an opinion as to treatment about November 1st, 1898, at which time there was a vesical fistula in the left vault of the vagina some two inches in length; the left ureter ran to the outer side of the opening and practically discharged its urine directly into the vagina, the vesical mucous membrane was prolapsed and of a dark red appearance. After carefully considering the difficulties presented by operation, it was advised against, and the following treatment adopted: The patient was kept in bed and a Sims' retention catheter placed in the urethra; this was removed every second day and thoroughly sterilized. While wearing this catheter the patient was kept for a week at a time in the right latero-prone position, so that no urine drained through the fistula. The vagina was washed out daily with a saturated boric acid solution. This line of treatment was faithfully carried out for a month, during which time the opening progressively diminished in size. I again examined the patient on December 2nd, 1898; the opening into the bladder at this time would barely admit a No. 26 (French) sound, and she could retain urine for from one to two hours in the upright posture, and then void it voluntarily via the urethra. No leakage from the bladder occurred except when in the recumbent posture, owing to the high position of the fistula. This result was so gratifying that we decided to make further efforts toward securing a

spontaneous closure. Treatment in bed was continued every alternate week, and the edges of the fistula stimulated with fused silver nitrate. While in bed the right latero-prone position was constantly maintained and a retention catheter kept in the bladder. The next week she was up and about her work. When seen on January 20th, 1899, the vesical opening had entirely closed, and all leakage ceased, some slight cystitis persisted, which necessitated her emptying the bladder every two hours or so. This slight disturbance has been improved by salol.

Brooklyn, N. Y.

MULTIPLE PREGNANCY, WITH REPORT OF CASES.

A. W. SHEA, M.D.

THE term multiple pregnancy may be defined as the presence of two or more fetuses in the womb. From two to five ova may be impregnated at the same time, or one ovum containing two germinal spots. Cases are reported also where subsequent impregnation has taken place several months after the first, but this is only explained by the presence of a double uterus. It is of infrequent occurrence, and is considered by many authorities as an unnatural condition, in that it violates the rule of one offspring in the higher order of beings. Quadruplets and quintuplets are very rare. Triplets occur once in several thousand cases, and, although twins are met once in eighty or ninety cases, their advent is sufficiently infrequent to mark an epoch in the neighborhood, furnishing the gossips with food for much speculation and tickling the natural vanity of the proud parent, who, from the number of "units" thinks he should be considered "*extra potent*."

Hereditv is an important factor. A woman who has born twins once is likely to do so again; but in most cases, it is but another instance of the unexpected happening.

In records I have kept of a little over seven hundred cases of labor, there were nine instances of multiple pregnancy—eight of twins and one of triplets. Two of these cases were in the same subject and in succeeding pregnancies; but in the other seven the family history was negative.

The cases in detail are as follows:

CASE I.—Multipara, fifth labor, eight and one-half months pregnant. Delivered of twin girls. The first presented by the head and was living; the second by the breech and was dead. The cord was broken; one foot from the umbilicus was soft and blackened. The skin was macerated, and the child had the appearance of being dead for several days. There was a history of a fall one week before. There was one placenta with two cords and sacs. There was no appearance of bleeding from the placental end of the broken cord.

CASE II.—Primipara, seven and one-half months pregnant. Delivered of twins. The first, male, presented by the head; the second, female, presented by the breech. Both living, and each had a separate placenta, cord and sac.

CASE III.—Primipara, seven and one-half months pregnant. Delivered of triplets—two boys and one girl. The first two presented by the head; the third by the feet. Each had a separate placenta and membranes. Those of the first two, united at their edges, were expelled after the first two children. The third child and membranes followed in about ten minutes. Two of the children weighed four and one-half pounds each and the other four and one-fourth pounds. All were living and vigorous.

CASE IV.—Multipara, second labor, eight and one-half months pregnant. Delivered of twin girls. The pains were very strong and labor rapid. The first, presenting by the head, was born easily. The right arm of the second presented, and as the waters were broken, the umbilical cord washed down into the vagina. The head engaged in the superior strait, and realizing the necessity of acting quickly, I applied forceps to the head and delivered without much difficulty. A few minutes' artificial respiration restored the child. Both children were well developed, one weighing seven and one-half pounds and the other seven and one-fourth pounds. In this case, a large pelvis, comparatively small size of the head, and strong pains, assisted a delivery that would probably be impossible in a single pregnancy. There was one placenta with separate cords and sacs.

CASE V.—Multipara, fourth labor, seven months pregnant. She was suffering from disease of liver. Delivered of twin girls, both presenting by the head and each having a separate placenta and membranes. The children lived about two hours.

CASE VI.—Primipara, seven and one-half months pregnant. Delivered of twins, one of each sex. The male, which was much larger than the female, presented by the head, and after several hours of labor was assisted with forceps. The female presented by the breech and came easily. There was one placenta with separate membranes and cords.

CASE VII.—Multipara, seventh labor, seven and one-half months pregnant. Delivered of twin boys. Both presented by the head. Each had a separate placenta and membranes. They lived about two days.

CASE VIII.—Multipara (Case VII.), eight months pregnant. Delivered of twin girls. The first was delivered by a head presentation. The second presented by the right elbow. The patient flatly refused to take an anæsthetic, and it was with difficulty that I finally performed version. The introduction of the hand and arm into the vagina caused violent expulsive efforts. The second child was dead. Each had a separate placenta and membranes.

CASE IX.—Multipara, seventh labor, at full term. Delivered of twin girls. The first presented by the head, and was delivered in about four hours. The second, after one hour's delay, came by a breech presentation. There was one placenta with separate cords and membranes.

One of the most striking facts in the study of these cases is the shortened period of gestation, only one going to full term, and that one a multipara in the seventh pregnancy. The longest period in a primipara was seven and one-half months; and, with one exception, the longest period in a multipara was eight and one-half months. The premature labor, when not due to disease or accident, is brought about by overdistension of the uterus, and a consequent inability to carry the pregnancy further. The greater development of the uterus and the relaxed abdominal walls of a woman who has born children tend to prolong the pregnancy; while the opposite conditions in the primipara predispose to early labor.

Seldom is the diagnosis of twins made before labor in the multipara. In a first pregnancy a physician may be consulted during the later months, on account of the excessive size of the abdomen and the difficulty in breathing and locomotion; and then it may be possible to make out two foetal heart sounds, two

heads, and the limited amount of movement of the *fœtuses* within the uterus. After one child is delivered, the uterus still remains large, and the examination will show the bag of waters, and the presenting part of the second child. The diagnosis of three or more children is made only when two are delivered, and examination shows that "there are others."

The presentation in twins is of the utmost importance in its bearing on the mortality. Statistics of a large number of cases show that in 50 per cent both present by the head; in 33 per cent one by the head and the other by the breech, while the remaining 17 per cent include all possible presentations. In the eight cases reported, two presented both by the head; four had the first present by the head, the second by the breech; one had the first by the head, the second by the right hand and prolapsed cord; and one had the first by the head and the second by the right elbow.

The average size of children in a plural pregnancy is smaller than when but one is born. Other things being equal, and the presentation favorable, labor is easier and shorter than in a single pregnancy. When both children enter the pelvis at once, and in a head and breech case, where the breech descends first, and the chin of the first child catches upon that of the second, the twins become locked, and the method of delivery must be governed entirely by the conditions present; the relative size of the child and the pelvis determining whether the head of the second child can be pushed up, or whether decapitation or perforation of the first child will be necessary. In the most favorable cases it is hardly probable that the first child will survive.

The mortality of children in multiple pregnancy is large on account of the diseases and accidents of gestation and birth, and their commonly immature development. The umbilical cord should always be securely tied in two places before being cut, so that there will be no loss of blood to the second child, in case both should be nourished from the same placenta, or the vessels of two placentas should anastomose.

The danger to the mother is greater on account of the larger area of placental surface exposed to infection; and the over-distended, weakened uterine walls, which, failing to contract firmly, predispose to postpartum hemorrhage.

In closing this paper I would only add that extra care and at-

tention is due both mother and children, in appreciation of their influence as factors in increasing the population, which is so desirable in these days of delayed matrimonial ventures and progressively decreasing families.

Nashua, N. H.

CERVICAL FLEXIONS—THEIR IMPORTANCE AND MEANS OF CURING THEM.

T. J. BELL, M.D.

OF all afflictions peculiar to females, perhaps malpositions or displacements of the uterus in part or as a whole, make up a very large majority, and when we consider carefully all the anatomical relations, together with the fact that this organ is capable of greater mobility than any other visceral organ, merely suspended, as it were, by guy-ropes in the most dependent cavity of the human body, the reason is apparent why displacements are not rare.

It is the purpose of this paper, however, to discuss flexions of the cervix, for the reason that I believe not enough importance has been attached to them by many medical writers, and that the evils resulting from them and the necessity for their correction do not usually engage the attention which they often demand.

It is a very great question in my mind whether very many of us have seen a great many cases of ante flexion of the uterus—I mean the body of the uterus, flexed upon the cervix anteriorly—but doubtless we have all seen, and perhaps see every day, young women suffering from dysmenorrhœa, perhaps first with amenorrhœa, or delayed menstruation, and after the flow has been established with dysmenorrhœa at every subsequent period, which, if the cause can be sought for, will be found to be none other than an ante flexion or retro flexion of the cervix.

I am aware that in this suggestion I am running counter to the opinion expressed by some of our best text-book authors, for in Keating & Coc's admirable work, we find only a passing notice of cervical ante flexions, wherein the author states his firm conviction that ante flexion of the cervix of moderate degree causes no symptoms, whereas I shall assume the position that flexion of the cervix is perhaps the most frequent cause of all the displacements

of dysmenorrhœa in unmarried or sterile women, and shall endeavor to make plain the reasons why this is so. The uterus being suspended by its ligaments between the bladder, and the rectum directed from above downward antero-posteriorly, or, in other words, normally, in a state of anteversion, with its fundus about on a level with and from two to two and one-half inches in front of the promontory of the sacrum, and resting lightly on the bladder in front, which organ lies in close proximity to the superior border of the symphysis pubis, and when the bladder is empty the fundus rising very little above the pubic bone with bladder intervening, I conclude that it is a mechanical impossibility to have a displacement of the body of the womb, either forward or backward, as long as it remains suspended in this locality, or in plainer words, the whole organ must be forced from its normal locality, either upward or downward, before there can be an appreciable displacement of the body forward or backward, pathologically speaking, for the reason that any attempt at forward movement beyond its normal range would be prevented by contact with the pubic bone, and likewise exaggerated backward movement would be interrupted by the promontory of the sacrum, so that extreme anteversion or extreme retroversion without displacement is not pathological.

The cervix, however, having a much wider range, may be flexed anteriorly or posteriorly without disturbing the normal range of the corpus, and particularly is this true in relation to ante flexion. The normal direction of the cervix is toward the hollow of the sacrum, and the corpus being in its normal locality, any divergence of the cervix from this direction is very apt to be a flexion of the cervix itself, inasmuch as we cannot have an anterior or posterior displacement of the body without a prolapse, and as the great majority of cases of prolapse are found to be in child-bearing women, or in women who have borne children, the fact is evident that cervical flexion, or I will say cervical ante flexion, is by far the most frequent cause of dysmenorrhœa in young women.

As to the cause of cervical ante flexion, I believe in the great majority, if not all cases, it may be found to be lack of proper development. In certain occupations hard-worked girls, or such as may not be properly cared for at that most critical period of life when the uterus is expected to descend into the pelvic cavity and

assume the menstrual function, or else that this physiological change is anticipated by tight lacing, forcing the infantile uterus down into the pelvic cavity prior to this necessary development, and the result is that nature, endeavoring to remedy the deformity by increasing nutritive material to the part, as the child uterus is to soon assume the functions of an adult uterus, and like the cucumber in the bottle, will conform its growth to the shape of the bottle, the result is a development of the longitudinal muscular fibres, at the expense of the circular, bring the girl to her menstrual period with a long conical pendulous cervix, and the junction of the cervix with the corpus being naturally the weakest part, flexion is very apt to take place, simply by the dropping forward of this elongated organ into a state of ante flexion.

I believe if every case of ante flexion could be seen early, that is, before any inflammatory action is set up, just this condition would be found to exist. I have never seen an elongated conical cervix without a flexion, either forward or backward.

True, occasionally we may find a flexion resulting from inflammatory action, adhesion, cicatricial contraction, or what is more likely, I believe, the result of improper development.

Of the symptoms giving a suspicion of flexion, the first, no doubt, will be dysmenorrhœa. At the first menstrual period considerable pain will be experienced, and at subsequent periods like experience will be the rule, only with a probable increase in severity, until at some time an inflammation may result, and we may have added leucorrhœa, indicative of endometritis; rectal tenesmus, the result of posterior displacement; vesical tenesmus, a not infrequent accompaniment of metritis, and parametritis, and finally a failing in the general health and vigor of the young woman, and life has become to her a burden.

In the married state, there is added sterility, and strange, but true, that these are often the very women who would love most to have a baby, so that the knowledge of the fact that she may never, while in this condition, become pregnant will impel her to seek the advice or aid of her physician.

Then should we not, if for no other reason, endeavor to cure these flexions, and give to these women capability of being impregnated, which they so much desire.

But whether married, or single, our advice should be to them to have these flexions, which are generally the cause of obstructive dysmenorrhœa, removed.

The question may be asked, at what time in a young woman's life should this be done, and how may it be accomplished? I would answer, as early as possible, and I believe no man will be justified in so advising a young woman, or her parents, that she will be permitted to go on from month to month, year to year, with no intelligent effort to relieve her of her distress, which she must experience every month at the return of her menstrual period. Unfortunately however, these young women, in their graceful timidity, often repel any suggestion that would offer an invasion of that part of their anatomy, which every sweet, chaste woman holds most sacred, and will continue to endure their ever-recurring periods of agonizing pain rather than submit to that which alone can afford them relief; nevertheless, objection, from whatever source, may not argue against the necessity for operation at the earliest possible moment, for proper methods adopted early may save the woman from a life of suffering and save to the world a child-bearing woman.

I will say that I have no exclusive method but that which I have generally adopted, whether for relief of dysmenorrhœa, or sterility, or both, is after determining the direction of the flexion, as well as the degree, to seize the lower end of the cervix, if an anteflexion, at its posterior aspect, or if a retroflexion by its anterior aspect, with a double tooth vulsellum forceps, and draw it sharply in the opposite direction to that in which it is bent, by which means I reduce the sharp angle to a moderate curve, and while holding it in this position I insinuate through the canal, and the internal os, first a small smooth olive-tipped sound, to be sure that the way is clear for the introduction of the dilator, and I must say that I have no special preference for any particular make of dilator, so that it is not clumsy, and is slightly curved to adapt it to the gentle curve of the cervical canal, and can be operated with intelligence.

I usually use Goodell's. Sometimes, if the canal is very small and unyielding, I use first a very convenient instrument devised by Molesworth, until the canal will permit the passage of the Goodell dilator, with which I proceed to dilate in every direction, until I have secured an opening through to the size of one-fourth to one-half an inch in diameter, as indicated by the graduated screw in the handle of this instrument.

If the patient is an unmarried woman, and the uterus occupies

its normal locality, very likely this dilatation, once or twice a week in the intervals between the menstrual periods, will be all that is necessary in the way of instrumental interference.

If, however, after two or three months' treatment in this way the case is not relieved, or if the patient is a married woman, I either pass a rather thick piece of gauze or a cervical pessary through the entire length of the canal, to be retained until the next treatment.

In married women I have used with some degree of success a little device—perhaps not altogether orthodox—invented by Outterbridges, and about all that recommends it is the fact that it will be retained without tamponizing the vagina.

I believe the benefit we may get from anything passed through, and retained in the cervical canal, is in the way of development of the circular muscular fibres, particularly of the corpo-cervical junction at the expense of the longitudinal, thereby increasing the circumference and diminishing the length of the cervix, and that this was doing much towards removing the cause of the flexion.

I have seldom found it necessary to incise the cervix, and believe this is a questionable procedure in married women, and should not be done, except in extreme cases, and when other means have failed, for the reason that cicatricial tissue resulting from these incisions may materially interfere with dilatation in labor, should the woman fortunately be cured of her sterility; however, the work must be thorough to have results.

In retroversion, which must necessarily be accompanied by prolapse, the necessity for restoring the organ to its normal locality is of first importance, and should always be done before attempting to correct flexions of the cervix.

Within the last two years it has fallen to me to treat quite a number of these cases of cervical flexion, mostly in married women, a few of which I will report in this connection.

Mrs. B., age about 32, sought advice on account of unsatisfactory copulation and sterility. She had married a widower several years her senior, a large muscular man, and she said that while she had always suffered much at her menstrual periods, she would be willing to endure this if she could satisfactorily accommodate her husband.

She was of small frame, and I found upon examination the

vagina and uterus both poorly developed; a long conical cervix, flexed posteriorly upon a prolapsed corpus, in a state of adhesive retroversion. I gave her very little hope of entire perfect relief, notwithstanding which, she was willing to make any attempt that would promise even a partial relief from her "deformity," as she termed it.

I shall not consume any time in detailing the technique, but will say that the patient, as well as myself and assistants, with all instruments and appliances, were rendered as thoroughly aseptic as the circumstances would permit. With the women in the dorsal position, I made an attempt to straighten the canal by drawing the cervix forward and upward, but found the canal so small and the flexion so great, that it was with difficulty that I could pass a small silver probe bent to an obtuse angle. I then made an incision through the posterior vaginal wall in the median line of Douglas' cul-de-sac, and enlarging it with my fingers, at the same time working my way up to and breaking up the adhesions, which bound the uterus down, was able to deposit this organ to its normally anteverted position, and while an assistant held it in position with his finger, pressing down the abdominal wall, above and behind the womb, I packed the excavation from which I had lifted the uterine body with iodoform gauze, and allowed it to remain until the fourth day, when I removed the gauze, washed out the cavity with an antiseptic solution, and re-packed, the gauze remaining this time for only two days, after which time I washed out, and re-packed every second day, until I found the uterus willing to remain in anteversion. After I was satisfied with the position of the body, I had her again anæsthetized and paid my respects particularly to the cervix, and found that although I had corrected the malposition of the corpus, the cervical flexion and stenosis were as great as before, and notwithstanding that I could apparently straighten the cervix by traction, with the forceps, yet I was not able to pass the sound until I had passed the small silver probe as a guide; with the sound I pressed the walls of the canal apart until I could with safety pass a long, narrow bistoury, with which I incised the constriction at the point of flexion, to a degree that permitted the passage of Molesworth's dilator, which I opened to its full capacity, and then following with Goodell's instrument, I succeeded in divulsing the canal, as it were, and packing the canal through and through with

iodoform gauze; allowed it to remain until the third day, when I removed the packing, and finding the canal patulous, I again dilated thoroughly and repeated this every fourth or fifth day until the incision had healed, at which time the canal was almost normal, with the corpus occupying a fairly anteverted position. She was discharged with instructions to advise me if her next menstrual period should be attended with much pain.

Never having received such advice, I have reason to believe my efforts successful, at least, in relieving her of dysmenorrhœa. I report this case as one of extreme retroflexion of the cervix, complicated with adhesive retroversion and prolapse of the corpus, and as other methods had been tried, and failed, as one which could only be relieved by first breaking up adhesions and restoring the uterus to its normal anterior position.

Mrs. L., age about 30 years, married eight or ten years; had since the appearance of her menstruation suffered much with dysmenorrhœa; had never been pregnant, and I was called upon to relieve these troubles. I found uterus in normal locality and position, but the cervix, which was small and pointed, was bent upon itself anteriorly to a flexion of the second degree. Under chloroform I had little difficulty in drawing the cervix downward and backward until the canal was straightened enough that I could pass Goodell's dilator, and with this dilated the canal fully, eurented the uterine cavity on account of an old chronic endometritis and packed the whole cavity and canal down to external os with iodoform gauze, which remained only to the next day, when I removed the packing, irrigated the cavity and again dilated the canal and packed it only with gauze; this was repeated every four days, until all discharge had ceased, at which time I introduced the Otterbridge pessary, to remain until the approach of her next catamenial period, when it was removed, and again inserted it after the menses had ceased, and she wore it without any inconvenience through the next month. I should have said that she was instructed to use hot vaginal douches daily the whole time she was wearing the pessary.

Her menstrual periods were afterwards accompanied with very little pain, and in about five or six months from the time of the operation she conceived, and now has a fine girl baby, which, however, her husband declares was not the result of my work, but of some medicine he saw advertised, and bought for her.

The third and last case I shall report was Mrs. P., a young married woman, who had suffered with dysmenorrhœa throughout her menstruating life, and as her periods were growing more and more painful at each succeeding time, and having failed to conceive, now, after nearly two years of married life, she was induced to undergo treatment. I found corpus properly located and normally poised, with the cervix anteflexed only to a very moderate degree. I straightened out the neck with vulsellum forceps and after passing the sound, had little difficulty in passing Goodell's dilator. I dilated thoroughly only at two or three different times, and then introduced the little wire pessary, which remained until approach of menstrual period, when it was removed, the vaginal canal thoroughly irrigated, and the case was cured; she conceived the very next month. This case is one of many which disproves the claim that anteflexions of the cervix of moderate degree cause no symptoms. To summarize:

First, I will say that cervical flexions do not command the attention which their importance demand; that they are often overlooked as being the cause of dysmenorrhœa and sterility.

Second, that anteflexion of the uterine corpus is of very rare occurrence, and that this, as well as corporal retroflexion, is a mechanical impossibility without prolapse.

Third, that the first cause leading up to anteflexion lies in faulty development, and that an elongated conical cervix always means faulty development.

Fourth, that dysmenorrhœa in unmarried and married women, with sterility in those who are married, should raise a suspicion of flexion at the internal os.

Fifth, that as doctors, we should advise the correction of flexions in both married and unmarried women, at the earliest possible moment.

Sixth, that the method of correcting them, whatever it may be, must be thorough.

Tyler, Texas.

TUBAL PREGNANCY, WITH REPORT OF CASES.

J. M. BLACK, M.D.

GLANCING for a moment at the history of ectopic gestation, we find that the first case of which we have any clear account is one described in the eleventh century by Albucasis, an Arabian physician living in Spain, in which he observed parts of a fœtus escaping through the abdominal wall by suppuration. Strange to relate, this is the only case mentioned in medical literature down to the sixteenth century, and even here we find only vague and meagre details of the cases of Polinus, Horstius, Platerus and Primerose.

The seventeenth century affords more exact descriptions, and some attention is given to distinct varieties. In 1604 Riolanus gives us the first accurately recorded case of tubal pregnancy. In 1614 Mercerus discovered and described a tubo-ovarian pregnancy, and in 1682 Maurice brings to light the earliest noted case of true ovarian pregnancy.

The eighteenth century records the cases of Martin, Duverney, Turnbull, and others—the most complete account being set forth by W. Josephi, in his Latin Dissertation published in 1784.

The first clear description of interstitial tubal pregnancy was given by Dionis, of France, in 1718, though this condition had been previously recognized by Mauriceau. Early in the present century similar cases were noted by Schmitt in 1801 and Albers in 1811. The first clearly described case of the extraperitoneal development of the ovum between the broad ligament was that of Madame Lofort, published by Bergeret, near the end of the last century, other cases of this variety being described by Loschge in 1818 and Lobstein in 1824. These and many others figure in the discovery and elucidation of ectopic gestation, but special prominence is given the name of Dezeimeria in the first half of the present century, and Dezeimeria is eclipsed in the latter half by the immortal Tait, to whom belongs the honor of having first thoroughly dissected traditional beliefs, and of pointing out their inaccuracy and unworthiness. His able consideration of this subject, from the year 1873, when he first brought it for-

ward, until the year 1889, when he published in his well known text-book a complete account of his work, has been of the greatest value, and has been the means of stimulating other workers who have helped to add to our knowledge, until in the present day it lies within the power of all to deal intelligently with these hitherto obscure and intractable cases.

This paper, being more a report of cases, it is foreign to the intention of the writer to take up time with an exhaustive treatise upon the etiology, pathology, symptomatology and treatment of tubal pregnancy; so I shall merely touch upon these.

We are all well aware that the etiology is still shrouded in mystery, and must remain so until such a time as something more definite shall have been determined as to the exact site of impregnation. The theory which has gained the widest acceptance is that it is due to some lesion of the interior of the tube obstructing the ovum in its passage to the uterus. This lesion is, in some cases, a desquamation of the epithelium; in some a stenosis of the lumen by the traction of the peritonitic adhesions, causing an angulated condition of the tube; and in others a change in the epithelium short of desquamation, but sufficient to cause a departure from its normal function.

The theory of lesion in the interior of the tube seems to cover a large number of cases, and is strengthened by the fact that frequently a history of trouble on that side of the pelvis can be elicited, and then, even, is often, though not always, preceded by a period of sterility; it is also supported by the theory that the normal site of impregnation is in the uterus, and that if the ovum is delayed and impregnated in the tube, ectopic gestation results. This disaster may occur at any age—it may happen in a woman who has borne several children, or it may happen in the first pregnancy a few months after marriage. It may be preceded by a long period of sterility—it may follow a confinement by only a few months—and it may even accompany and be caused by an ultrauterine pregnancy.

The pathology deals with:

First, changes which occur in the tube; and

Second, changes which occur in the ovum.

I pass the consideration of these for that which at this moment is of more importance, and beg to call attention briefly to the symptoms; for by these and a careful study of the history of the patient the diagnosis is usually made.

In almost every case there has been some departure from the normal menstruation—the patient having gone over her monthly period for a longer or shorter time, varying from a few days to several weeks. Occasionally no period has been skipped, and we note only a change in the character of the last menstruation, usually a lessening in the amount. Sometimes, instead of the ordinary, we find the menstruation with only a splash, just enough to stain the linen; then an irregular dribbling of brownish discharge, containing debris. The early symptoms of pregnancy are often present, such as morning nausea, sensitive breast, etc. The next symptom which may surprise the patient is a sudden and severe pain on one side of the abdomen—a pain that is so excruciating as to often cause the patient to grow pale and faint, and perhaps lose consciousness. She frequently vomits; the pulse becomes rapid, and the temperature subnormal. Following this attack of pain, symptoms of pelvic peritonitis often arise. They may subside and the patient be up and around, when she is suddenly seized with another attack of pain, syncope, etc., even worse than before. But further symptoms, together with the physical signs and diagnosis, will be brought out in the following report of cases:

CASE I.—Mary C., colored, aged 37, multipara, three living children, normal labors, last prior to this six years. Was called to see her in consultation with a brother practitioner, who said, "Come prepared to deal with a difficult case of labor." Upon arrival I found a woman who had been suffering with spurious labor pains for eleven days, passing from the hands of an ignorant midwife and other questionable skill, until she reached the excellent care of the physician in charge at the time I saw her. I examined her immediately, and found the uterus enlarged to only about the size of a three months' normal pregnancy, the cervix widely dilated, the entire uterine body being softened, and a profuse bloody discharge; but except for this flow and a thickened endometrium, the uterine cavity was empty. Upon further examination the diagnosis of tubo-abdominal pregnancy was speedily made, and the presence of a foetus in the abdominal cavity, with breech in the pelvis and head in the right hypochondrium, was demonstrated to our entire satisfaction, and immediate operation was advised. The patient presented evidences in the lacerated vagina and edematous vulva, depleted

circulation, pulse 120 and hurried respiration, of having suffered greatly from serious maltreatment and prolonged anæsthesia, and dissolution seemed so imminent that the utmost expedition was used; and two hours later, in the midst of the squalor of her humble surroundings, and in the presence of a dozen or more of my *confrères*, I opened the abdomen and extracted therefrom a fully-developed ten-pound living girl baby. I found the placenta springing from the right Fallopian tube and attached to the posterior aspect of the fundus uteri, with some intestinal and omental adhesions; these were broken up, and the placenta was dissected out in its entirety, a double ligature was thrown around the tube, and its severance close to the uterus was accomplished. The abdominal cavity was cleansed and closed with through-and-through silkworm gut around a glass drainage tube, and the dressings applied. The child lived two hours and the mother eight, death occurring in both instances by exhaustion. I cannot refrain from the statement that it is my belief that if a correct diagnosis and treatment had been made and instituted eleven days sooner, both mother and child would have been saved.

Further history of this case, obtained after the operation, revealed the following facts: That conception must have occurred nearly twelve months before delivery, and that the rupture of the tube took place six weeks after conception, as was evidenced by a sudden, sharp, excruciating pain setting up in her right side while bending over the wash-tub. This pain was accompanied by slight uterine hemorrhage, nausea, syncope, etc. These symptoms speedily abated without medical aid, and in a few hours she was enabled to resume her work. The slight hemorrhage, above mentioned, was the only suggestion of menstruation throughout the entire gestation.

CASE II.—Mrs. W., white, aged 33; six years married; no children. Menstrual epoch always painful. Began taking emmenagogues from Dr. C. for suppression of menses, which she had not seen for two months; while quite under the influence of these toxic drugs sexual congress was indulged in and the coitus was immediately followed by terrible pain in right iliac region. Being in the neighborhood, I was hurriedly called, and found her in a state of general collapse. Examination per vaginam revealed uterus normal, left tube and ovary normal, but tenderness in right tube, upon the outer third of which I discovered a soft

fluctuating tumor about the size of an English walnut. Immediate diagnosis of ruptured tubal pregnancy was made, and operation advised at once. The family opposed the operation, and occasioned a delay of twelve hours. In three hours from first observation, the tumor enlarged to the size of an orange, and when operation was consented to, her condition had shown some rally from the shock and considerable general improvement. A three-inch incision was made; the affected tube was tied off close to the uterus; a tiny fœtus and its membranes were removed; a pint of clotted blood was mopped out of the fossa, and the abdomen closed without drainage and the usual dressings applied. Patient made a quick and uninterrupted recovery, and in two weeks was able to attend to household duties. Menstrual function has been perfect ever since.

CASE III.—Mrs. M., white, aged 39; mother of two children; previous labors normal; a patient of Drs. Willis and Fox, of Greenville, Tenn., who, having missed her menstruation eight weeks, made a misstep out of her kitchen door, which was speedily followed by a sickening pain, nausea and faintness, and slight uterine hemorrhage. Half an hour afterwards, when seen by the doctor, she presented symptoms of collapse. A consultation was held by the above named gentlemen, and a diagnosis of ruptured tubal pregnancy was made. Forty-eight hours later, assisted by these gentlemen, I opened the abdomen, found right tube ruptured at about the middle, with the fœtal membranes protruding. I found the fœtus free in the pelvis, and about one quart of clotted blood. These were removed, with the injured tube, and the abdomen closed in the usual way. Recovery was speedy and uneventful, and the patient going about in three weeks.

CASE IV.—White, aged 29; married four years; no children; no miscarriages; never strong; rather a tubercular diathesis; menstrual history unimportant. Had missed two periods; was seen June 8, 1897, by Dr. D. J. Williams, of Ford, Ky., one hour after jumping from her horse. He found her with great pain in left iliac region, extreme nausea, pallor, cold sweat, and syncope. He diagnosed it ruptured tubal pregnancy. Two days later I saw the case with him; confirmed his diagnosis, and we operated, finding a ruptured tube, with fœtus and membranes free in the clotted blood that filled the pelvis, all of which were removed and the abdomen closed. The recovery was slow, but complete.

CASE V.—Mrs. B., white; mother of three children; normal labors; youngest child five years old. Operated on March 10, 1896; right tube ruptured, immense hæmatoma, foetal membrane found, but no foetus, as only one period had been missed and the operation was done six weeks after the rupture had taken place. Recovery perfect in this instance.

CASE VI.—Mrs. S., aged 32; no children; married five years. August 28, 1897, six weeks after her last menstrual period, she was seized with pain in left ovarian region and all the symptoms attendant upon shock. She came under my observation September 3, and I made the diagnosis of ruptured tubal pregnancy. An operation was at once performed, and on opening the abdomen, I found the pelvis filled with clotted blood, left tube ruptured in outer third, the foetus and membranes in the clot. All was removed, and the patient being almost exsanguinated, the cavity was irrigated with hot saline solution, about one quart being left in the abdomen. The wound was closed and the patient recovered.

Knoxville, Tenn.

THE DIFFERENT PHASES OF ELECTRIC TREATMENT.*

J. MCFADDEN GASTON, M.D.,

PRELIMINARY to any details of the application of electricity as a therapeutic agent, it is proper to notice the various sources of electricity. Commencing with the experiments of Franklin with the kite and a wire, by which it was demonstrated that electricity passes from the clouds to the earth, practical observations upon this means of manifesting electric phenomena have been made which go to prove that all bodies are endowed with what may be styled latent electricity. This holds in regard to inorganic as well as organic bodies, and it only requires the resort to a certain process to develop manifestations of electricity. The Leyden jar is the most simple contrivance for exhibiting the local accumulation of the two elements of static electricity, which are kept apart

*Abstract of paper presented to the meeting of the Southern Surgical and Gynecological Association at New Orleans, December 6th, 1899.

by the non-conductor of glass, until a jointed metallic conductor is brought in contact with the inner and outer surface of the glass jar, which has a coating of tinfoil covering the lower portion of the jar. Static electricity is generated and collected by processes with which all who have been in a chemical laboratory are familiar, and needs no elucidation.

The other modes of generating electricity are recognized generally by the names of those who have invented apparatus suited to the different modes of manifestation, such as Volta, Faraday, and Galvani. Independent of these exhibitions of electric force the dynamic current is derived from a permanent electro magnet, in which the current is of an alternating character. This form of current possesses great electro-motor force, but is practically the same as the Faradic current, and not so well adapted to the treatment of diseases.

The terms employed to qualify the action on the tissues are electrolysis and cataphoresis, the latter being the entrance of medicines from the positive electrodes of the battery.

The continuous current is employed in applying electricity for the modification of the abnormal structure, and the negative pole is brought in contact with the tissue of the part or organ to be acted on in the process of simple electrolysis. This is accomplished in most cases by using a needle as negative electrode, inserted into the affected tissues. It is found that with the transmission of the Galvanic current, the tissue into which this enters becomes disintegrated and that small bubbles of gas escape around the needle, so that it gradually becomes loosened, thus breaking down the indurated structure.

When it is desired to convey any medicinal influence through a part that is diseased, a solution of the medicine is placed upon the pole of the positive electrode, and with the action of the electric current the medication is transmitted to the intervening tissues so as to make its appropriate impression.

The interrupted induced current from a Faradic battery is usually applied in cases of impaired nerve power and paralysis or paresis, in which order of debility, not dependent upon any radical organic change in the nerve centres, we may expect benefit. In certain forms of neuralgia and in rheumatism the inductive process may be relied on for relief in connection with medication internally and massage over the region involved.

The favorable action of a horse-shoe magnetic application in some neurotic conditions is due to the recognized fact that a magnet is a magnet by virtue of currents of electricity circulating around the central mass of iron.

There are many variations of so-called electric belts and appliances which do their work upon the imagination without effecting any material change worthy of note.

The adaptation of the various forms of electricity to different diseases of a medical and surgical character has encountered opposition by gynecologists on account of the alleged adhesions of the structures involved. It is claimed that in the event of a failure to arrest the disorder and that a surgical measure should be found necessary, complications are met with from the agglutination of the tissues. That benefit is derived in some cases of uterine fibroids by the resort to electricity is generally admitted, but it is claimed by those opposed to its use that more harm results from its application than benefit. It should be noted that those having most faith in the electric treatment are applying it to a great variety of cases and thus speak from experience of its good effect, whereas those opposed to it, refuse to put it to the test of actual use in their practice. Practical application and not theory should settle this matter.

The special favorable results of the use of electricity in extra-uterine pregnancy obtained by Thomas and by other gynecologists, prior to the rupture of Fallopian tube or sac elsewhere of the adnexa, should be limited to the death of the fetus. It is not understood to extend to the absorption of the components of the mass, but simply to arrest of growth by death of the fetus. It is evident that changes take place subsequently which would render an operation less dangerous in some cases, but on the other hand decomposition of the dead fetus may lead to the collection of pus which assumes the nature of a diffuse abscess in the abdominal cavity accompanied with contamination of the whole system, and in the end terminating fatally. The writer has met with such a case that was verified by a post-mortem examination and accompanied by the most offensive odor which has been encountered in any other collection of a purulent nature.

The resort to laparotomy in ectopic gestation has been attended with good results in so many instances at various stages of pregnancy as to authorize section in suitable cases, whether the fetus

be dead or alive; and it is not precluded by a previous use of electricity for the arrest of fetal development.

The class of cases in which electrolysis and cataphoresis have been employed are generally of a benign character; but even malignant growths have been removed without resorting to the knife or escharotics of any kind. The use of a destructive process with an electric cautery has also proved effective in inoperable tumors of a malignant nature and has advantages over those of a chemical order, such as caustic potash and arsenical paste.

Betton Massey, of Philadelphia, has the credit of introducing the electric cautery as a destructive agent in the treatment of malignant growths and his results have proved satisfactory.

The simplest application of the disintegrating process effected by the continuous current through a needle constituting the negative electrode, is in the removal of hairs from the face, which, when done with proper precaution, do not return.

With a suitable electrode on the negative pole strictures of the urethra, the rectum, and œsophagus are relieved greatly, if not entirely cured, by the continuous current of galvanism.

Enlargement and induration of the prostate gland are treated successfully by the insulated negative electrode, and without any considerable discomfort.

Nevus and cirroid aneurism in which the blood vessels are unduly developed are found to yield under the use of the electric current connected with the needle introduced around the border of the growth of vascular tissue so as to cut off the circulation.

In the treatment of vascular tumors of all kinds by electricity, the favorable result depends upon the local coagulation of blood with the formation of thrombi in the affected mass.

Sacculated and other forms of large aneurism have yielded to the punctures with needles on each side and the passage of electricity through the sac and contained mass of blood.

Epithelioma, sarcoma, and lupus are undergoing the crucial test of clinical observation upon the results of the electrolytic process in connection with special application of active medication through the positive pole.

R. N. Fraser has recently reported his case of recurring malignant disease of the scrotum by Gaston's method of cataphoresis and the internal administration of Donovan's solution. Seven recurrences were promptly treated by the knife, and followed by

this method until a cure with no recurrence for fifteen months resulted. He considers that a trial should be given all cases of recurrent disease, and no operative measure withheld at the same time to aid and supplement the action of electricity.

But, above all, early treatment is necessary in tumors of a malignant type, and it is my candid opinion that many cases will yield to electricity systematically administered in the way that Betton, Massey, Fraser and myself have indicated. It has been, however, my experience that people were referred to me when all the lymphatic glands were thoroughly poisoned and when the rapid disintegrating process precluded the idea of relief by electricity.

Even the more radical measures advised by Betton Massey meet with success when resorted to early in the treatment of malignant tumors.

His result with tumors on the breast coincide in the main with mine in cases of sarcoma and carcinoma, where the microscope left no doubt as to the character of the neoplasm.

In tumors of the breast a disposition to recurrence must be met by constant and repeated applications of electricity. Cases in which cervical endometritis yielded to a limited number of applications of electricity would convince me of the great efficacy of the local application of Lugol's solution of iodine and iodide of potassium to the cervix at the negative electrode.

Such cases are amenable to treatment with intrauterine electrodes and the Apostoli clay electrode on the abdomen, with the Apostoli bi-polar electrode, or with the Goelet intrauterine electrode and a small round zinc amalgam or copper electrode externally.

A state of chronic invalidism with loss of flesh, constant pain, and the most marked despondency, may give way to perfect health, an increase of adipose tissue, relief of pain, and buoyant spirits. But regular and systematic treatment, attention to the condition of the bowels, and to the habits of the patient should be regarded.

The cases of cervical endometritis may be mistaken for leucorrhea, and even gonorrhea, and it is necessary to examine digitally or by speculum, for erosion, cord-like condition and protrusion of the cervix.

Another class of cases presenting a phase of electric treatment

consists of ulcerated patches due to epithelioma or varicose veins or any lack of power vascularity of the tissues. These eroded and suppurating sores differ from the ordinary effects of inflammation in the peculiar indolent character of the skin. Very many of these show no tendency to spread, but remain for months and years almost stationary. The application of the electric current to the skin supplies a stimulus to the vaso-motor nerves, and a new growth of cells may result.

In these cases Donovan's solution may be used by cataphoresis and is an excellent antiseptic and germicide. At the same time blisters are the result of a strong current with the electrodes within a few inches of one another. These blisters at times give some concern to the patient, but are uniformly satisfactory, forming simply a dense scab, resembling a button, even when quite extensive.

Many cases of atrophy of the muscles are due to deficient innervation and only require an active agent like Lugol's solution to respond to treatment thereby.

Techsner has reported such cases to be benefited by certain gymnastic exercises, but in the case of a man earning his living by the exercise of these muscles a sufficient use of them may be already present, and only a comparatively penetrating agent, such as molecular decomposition is, may arrest further atrophy.

Hemorrhage from the nose is a frequent symptom of malignant tumors of the nostril and yields readily to the interpoler action of electricity. Granulation may progress favorably when aided by a decomposition of cells already thrown off in the granulating progress of repair.

But it is in inoperable tumors and remote and obscure masses of tissue, such as stricture of the œsophagus, rectum, or urethra, aneurism of the aorta and angioma of the mediastinum that the current of electricity holds a place by itself.

In many vascular masses and surfaces the positive needle may be necessary to arrest hemorrhage, but as a general rule, the needle should be used on the negative pole, while the sponge electrode upon which Donovan's solution is applied, may be the positive.

The cases of goitre which are most directly affected by cataphoresis are the parenchymatous enlargements of the thyroid gland. The so-called cystic variety is not so readily disintegrated and

may be better treated by the needle if the electrical current is used.

Hunter McGuire, of Richmond, reported some very interesting results obtained with tincture of iodine, applied on cotton at the positive electrode, in doses of from ten to fifteen drops.

The first of these cases was in an old person, and the applications were made daily for several weeks. After a certain time the thyroid had decreased to one-fifth of its former size. The gland then seemed to remain stationary and to resist further treatment. But two other cases were entirely cured by McGuire and so reported in the *Virginia Medical Monthly* in August, 1891.

It was partly due to these results that I undertook to treat all malignant growths by cataphoresis.

The cases of goitre coming under my personal observation have been treated after the manner of McGuire, using the Lugol's solution by preference. In cases where the Lugol's solution was applied to the negative pole a general erythema occurred at this electrode and the skin afterwards was excoriated and denuded; at times, even blistered.

For gentle treatment I would advise the use of two milliamperes and of a small dosage of iodine and iodide of potassium. The latter drug is a test for the positive pole, where a brown color will occur if a saturated solution is traversed by a direct current of 110 volts.

In the management of the direct current a few lamps may be used in circuit so as to decrease the amperage. Twenty 16-candle power lamps in series will change an ordinary incandescent lamp light so as to be scarcely visible, and the current of electricity, which is generally one-half ampere, to one-fourth of one ampere. This is equivalent to $\frac{1}{4}$ of 100 milliamperes, or 25 milliamperes.

This is a very useful average to establish in beginning the treatment of fibroids, or of sarcoma by cataphoresis. But after a week of such applications, eleven lamps may be left out of the circuit, and thus 1-18 of 1000, 1-9 of 500—55 milliamperes may be used.

And now we find that we have a more decided effect. By following each application with a galvanic battery by another with a faradic battery, we often secure admirable sedative results.

The X-rays, in the treatment of diseased organs, have proved efficacious in lupus, in securing epilation, in the solution of gall-

stones, and other oily or fatty substances. Cancers have also been benefited by the X-ray, if we may judge by the result reported by foreign papers.

The X-ray in surgery: In Chicago, Harriet Heilmuth, a child five years old, and for two years blind and a paralytic, has had her sight and the use of her limbs restored through the agency of the X-rays. Three years ago, while playing, she fell, striking on her head. The fall left her blind and with her right side paralyzed. A few weeks ago the X-rays were applied, and revealed a tumor the size of an egg pressing on the brain. The skull was trephined directly over the cyst, as shown in the skiagraph, and the tumor was removed. The child was able to move her limbs on regaining consciousness.—*Christian Observer*, October 18, 1899.

More important to surgeons may be the galvano-cautery, with the many devices used for snares and blades, and curettes. In polypi of the nose the galvano-cautery has held a high place for many years.

In curetting indolent ulcers and tortuous suppurating sinuses, a small, dull curette can often be introduced after cocainizing the tract, and the current can be made to so quickly pass the platinum curette that a long operation may be avoided.

Catheterization of the Fallopian tubes, in cases of pyosalpinx has been followed by cures when the galvanic current was introduced at intervals sufficient to neutralize the effect of the pyogenic cocci.

The names of such men as Engelmann, Munde, Skene, Keith, Martin, Massey and others will always shine as masters of the new method of electrical treatment, but to Sprague belongs the credit of the successful treatment of pyosalpinx by electricity by catheterization.

Varicocele and hydrocele are maladies which may be relieved by electricity, while hernia may be reduced under the faradic current. The vaso-motor nerves are influenced so as to slow the flow of blood to such an extent as to coagulate at the positive pole, while the negative pole may be capable of dissolving blood clots.

In this respect also the faradic current may induce contraction of the uterus in cases of post-partum hemorrhage and secure subinvolution in all relaxed conditions of the uterus.

According to Betton Massey, labor itself, at full term, may be hastened by the use of the faradic current which causes the pains

of labor to be less, but which supplies the necessary contraction to the muscles independently. There may be some therapeutic value attached to this suggestion in cases of inertia of the womb in long labors.

Atlanta, Georgia.

URETERECTOMY.*

J. WESLEY BOVEE, M.D.,

Surgeon to Columbia Hospital for Women, Gynecological Surgeon to Providence and Columbian University Hospital, etc.

SURGERY of the kidney is practically of recent date, although during the sixteenth, seventeenth and eighteenth centuries the practicability of nephrectomy had been discussed, and Zambecarius, in 1670, and Roonhuysen, in 1672, had proved by experiments on animals that one kidney could do the work of both. It may fairly be stated that Simon's successful nephrectomy in 1869, though done in an emergency and for an indication not now recognized, marks the beginning of the surgical treatment of this very important organ.

Surgery of the ureter was the logical sequence to renal surgery. Yet, strangely enough, Gigon had 13 years previously published a case of calculous anuria, recommending and carefully describing the technique of ureterectomy,—called by him "ureterotomie," and practically followed years later by LeDentu and Pozzi.

The interest in this subject has not lagged, and at the present time nephrectomy for injuries and diseases of the ureter is called for extremely rarely. Now calculi are removed from the ureter by incision; injuries to it closed by suture or drainage; strictures relieved by delicate plastic operations, curing many cases of hydronephrosis in this way; resections for complete section of it, either accidental or intentional, are easily and safely done, about 20 cases bearing evidence of this; and even its entire removal has been practiced nine times with very gratifying results. It is furnishing the surgical world today the richest field for excellent surgery.

By the term ureterectomy is understood the partial or com-

*Original abstract of paper read at meeting of Southern Surgical and Gynecological Association, at New Orleans, December 5, 1899.

plete removal of the ureter. If removed with the kidney it is primary and at a time subsequent to nephrectomy secondary ureterectomy. The partial removal is often done with nephrectomy, part of the pedicle being formed from the upper-end of the ureter, but this paper does not refer to such cases. Total removal was first done by Poncet in 1893, and the first partial operation by Tuffier in 1891. Since then the total operation has been done by McCosh (2 cases), Kelly (2 cases), Gerster, Hartmann, Morris and myself,—in all 9 cases. The partial operation has since been done by Reynier, Kelly, Postnikow, Schiller, Morris (2 cases), Elliot, Pouisson, Abbe and Sommers,—in all 11 times. Probably others have been done but not reported. The complete operation was primary in four cases (Kelly two cases, and McCosh and Morris each one). Partial primary ureterectomy was done 8 times by Tuffier, Kelly, Postnikow, Schiller, Elliot, Morris, Abbe and Sommers. But one of these 12 cases of nephro-ureterectomy was fatal (Morris', partial). Mine, a total secondary operation, also died, giving the 20 operations a mortality of 20 per cent.

In my case, a man, 48 years of age, who had had a nephrectomy three years before and later another operation for the remaining pus tracts, was found to be in a very feeble condition, his pulse ranging from 110 to 130 and his temperature from 99° to 101.6°. There were three sinus tracts in the left lumbar region discharging thin watery pus. An extraperitoneal exploration was made August 17, 1898, after free stimulation of the patient. An incision was made from just above the uppermost fistulous opening and in front of the quadratus lumborum muscle to an inch inside the anterior superior spinous process of the ilium. By careful blunt dissection and holding probes in the fistulæ the former location of the kidney was reached. Here was found a large amount of adipose tissue, containing many pus tracts and calculi and much cicatricial tissue. A little below this was found the upper end of the ureter surrounded by calculi and thickened pus. It was one inch in diameter and filled with cheesy pus and calculi. I immediately extended the incision to the inguinal canal and removed, in pieces, the whole of the duct. Its distended lumen ended abruptly about one-half inch from the bladder, the remainder being a solid cord. The wound was drained with gauze and partially closed. Death occurred in 17 hours, probably, in part, due to the very unusual high atmospheric temperature and

relative humidity. Two pieces of the ureter were sent to Dr. Kelly, who kindly sent me the following pathological report: "Specimen of ureter in 2 pieces, 8.5 and 6.5 cm. long, and varying from .5 to 1. cm. in diameter. Its wall is from 1 to 2 mm. thick and consists of a dense fibrous coat lined with caseous material which also fills the lumen of the ureter. Histologically, the lining membrane of the ureter consists of diffused tubercular tissue chiefly composed of large epithelial cells and hyaline material with here and there definite distinct tubercles and an occasional giant cell. This membrane merges into the caseous material which fills the lumen of the ureter and externally is limited by a zone of round-celled infiltration. The remaining portions of the wall consist of fibrous tissue and a few small muscle bundles. The fibrous tissue is poor in cells and to a great extent has become completely hyaline.

Diagnosis. "Caseous tuberculosis of the ureter."

Owing to the specimen having kept in a solution of formaldehyde for five months, it was very much shrivelled when sent to Dr. Kelly. At the time of its removal the lumen easily admitted the index finger. In this case the original trouble was probably renal tuberculosis, or possibly pyonephrosis from stricture of the ureter, complicated by the formation of calculi, some of which were not removed with the kidney as they were found in that region and in the ureter at this operation. The tubercular ureteritis descended almost or quite to the bladder, although a stricture near the bladder may have been the original site of the disease. If it was a descending tubercular ureteritis, then invasion of the bladder would probably have occurred had I not operated.

Indications. In nephrectomy the ureter if diseased should be removed if the kidney lesion be tubercular, since the ureter is very likely involved to some extent. Whether partial or complete ureterectomy is to be done is not easily decided in every case, but we cannot rely entirely on the appearance of the lower part of the duct if the upper end of it is involved and as much of it should be removed as practicable. In descending tubercular ureteritis the disease advances most rapidly along the mucosa, and the invasion is likely to be more rapid than can be detected at the time of operation. In malignant disease of the kidney the course of the lymphatic and venous channels are in the opposite

direction and therefore involvement of the ureter is not common. Walker found in 120 cases of sarcoma of the kidney but three had involvement of the ureter or bladder. Other forms of severe ureteritis demand removal of the canal. Old dense cicatricial strictures render its removal advisable when nephrectomy is done. Primary malignant disease of the ureter is not common. Probably the intimate relation between the ureter and peritoneum favors early extension of malignant disease and offers but a short space of time for the possibility of eradication. Syphilitic ureteral stricture might very rarely require ureterectomy. Hydro-ureter with hydronephrosis will in a few cases require nephro-ureterectomy, as in Postnikow's case. In 14 cases the operation was done for unmistakable tuberculosis and in four others this was probably the condition. In one (Abbe's) sarcoma of the kidney was the indication, and in that of Sommers traumatic hemato-hydro-nephro-ureterosis demanded the operation. Excruciating pain in the region of the ureter, especially if sinuses are present, will often call for exploration and probably ureterectomy.

It is generally the result of leaving behind a diseased ureter when nephrectomy for renal tuberculosis is done. But total removal of the ureter is not by any means indicated in all forms of severe disease of the duct. Of 19 cases in which the sex was given 13 were women. In every case of tuberculosis of the kidney or ureter the enlargement was marked and the duct easily palpated in the upper part of its course, especially during nephrectomy. In its lower portion the male rectum and the vagina offer very good facilities for its palpation. The ureteral catheter and bougie are exceedingly valuable in exploration and diagnosis. Then the marked symptom of localized pain, often excruciating, changes in the urine, particularly bacteriological, lead to a proper conception of the condition. Troublesome fistulæ are often present and are strong indicators. The condition of the kidney and ureter on the opposite side must be determined before operation.

Methods. For removal of the ureter two principal methods,—the transperitoneal and extraperitoneal, have been employed. It would seem the former would but rarely be preferable, especially as pus, either tubercular or otherwise, is so constantly in the condition demanding the operation, the danger of infecting the peritoneum very marked, and, as the ureter lies completely outside this

structure, its removal by the extraperitoneal route would seem to be the proper one from an abstract surgical standpoint. In the primary operation, however, with a large kidney tumor, the transperitoneal is the most convenient. Seventeen cases have been done by the extraperitoneal, two by the transperitoneal and one by combined extraperitoneal and vaginal. Certainly the upper part of the duct is reached with greater facility through the loin, especially in the primary operation. In women the lower end is most easily reached through the vagina. The whole length of the duct is much more easily dealt with in the male as the broad ligament, and uterine and ovarian vessels furnish difficult complications. The parasacral route for reaching the lower part of the ureter has no advantage. Probably the best incision for ureterectomy extends from near the last rib in front of the sacrolumbar mass of muscle to an inch above and to the inside of the anterior superior iliac spine and continued toward the pubes as far as is necessary, paralleling Poupart's ligament. In the male this is sufficient, and in the female it gives access to all above the broad ligament.

Technique. Care is necessary to not penetrate the peritoneum. By careful dull dissection it may be avoided and the ureter easily recognized. If the kidney has been removed some time, the upper end of the ureter will be difficult to find unless the end of it has been fastened in the lower end of the nephrectomy incision. Care is necessary to avoid injury of the round ligament, spermatic cord and blood vessels about the inguinal canal. For removal of the lower part in the female the vaginal roof is incised along the course of it. The ureter should be ligated before being severed, and as further precautions, cauterization of the stump and suture of the mucosa of it have been recommended. In my case these were unnecessary as the intra-vesical portion was solid. The sigmoid and cæcum, lying in front of the ureters, must be carefully avoided, as must the ovarian vessels which cross and recross it, and the uterine which also cross it.

A BRIEF SUMMARY OF THE INDICATIONS FOR OPERATIONS UPON THE STOMACH.*

MAX EINHORN, M.D.

AFTER briefly describing the indications for the various operations upon the stomach, Dr. Einhorn discusses at length under what conditions surgical intervention must be resorted to in ischochymia.

In ischochymia, due to benign processes, we should not be hasty in advocating an operation. We should first try all the rational non-surgical methods of treatment at our command, and only if they absolutely fail and the ischochymia remains in a high degree (i.e. persists even on a liquid diet), we should urgently recommend an operation.

In ischochymia resulting from malignant disease, an operation should be resorted to whenever possible.

In his conclusion, Einhorn submits the following two propositions:

1. Operations upon the stomach for malignant disease should be performed as early as possible.
2. In benign affections operations upon the stomach should be performed if all other curative means have been exhausted and have failed to produce material relief.

THE TREATMENT OF THE HIP BY THE BLOODLESS METHOD.†

M. P. REDARD, M.D.

The author, who is a firm believer in the bloodless operation for the treatment of congenital dislocations of the hip, presented the results which he has obtained in 30 cases. He described the technique which he employs, and recommends especially the preliminary extension and the slow extension with the Lorenz screw

*Original abstract of paper read before the New York State Medical Association.

†Original abstract of a paper read before the meeting of the Congress Français de Chirurgie, Paris, October 21, 1899.

after the reduction, and then the vigorous massage or subcutaneous section of the drawn adductors. The lower limb must be at once immobilized in plaster of Paris, applied closely directly over a muslin bandage in strong abduction with external or internal rotation.

The bloodless reduction is not a serious operation, and may indeed be well compared to the bloodless reduction which often follows death. Too violent movements for reduction on patients which are too old, or for double dislocation, are, it is true, the cause of evident accidents.

The bloodless operation ought to be tried on patients from two to twelve years old.

At twelve, as radiographs and functional results have proven, true reduction has been obtained.

On one case of double dislocation of the hip in a girl four years old, reduction was accomplished on both sides and she walks without a limp.

True reductions, according to this record of thirty cases, are frequent, transpositions rare.

Transposition may be avoided if the reduction is done in young patients, with gentle, slow movements followed by accurate immobilization of the lower limb in strong abduction, and rotated in or out, according to the kind of dislocation.

Radiographs made before the reduction and at different stages of the operation show the anatomical condition of the parts dislocated, the nature of the dislocation, the movements it is necessary to make to effect reduction, the position to give the limb when immobilized, and finally the results obtained (whether true reduction or simple transposition).

To sum up, bloodless reduction in young patients with proper technique, is free from danger and gives generally excellent results.

NEW APPLICATIONS OF THE UNDULATING CURRENT IN GYNECOLOGY.*

DR. G. APOSTOLI.

THE undulating current whose physical and physiological properties have been revealed to us by Professor Arsenval, has the double advantage of adding to the effects of the continuous current those of a varying one, which, compared with a faradic current, shows a more regular and less abrupt curve and with a sinuous form.

The absence of all reversing and all alternation permits the addition of the undulating state and hence assures it an important place among the different kinds of electricity applied to medicine.

Tested for the first time in 1896 in the clinic of Dr. Apostoli, it has been since then applied to a large number of patients, being used up to July 11, 1899, 4,232 times upon 308 patients for gynecological purposes alone. The general results of its gynecological application are as follows:

1st.—The chief characteristic of the undulating current consists of the more or less rapid analgesic power which induces the lessening, often even the disappearance of painful symptoms. Applied to intermenstrual pains or those of dysmenorrhoea, properly so called, it acts very powerfully to reduce or remove the element of pain, although it cannot always replace either faradism or static electricity.

2nd.—With no marked action against leucorrhoea of an infectious origin, it will often render service against congestive circulatory difficulties which accompany the puerperal state, and also diminish somewhat the discharges of leucorrhoea, which are fresh and often obstinate.

3rd.—Although it may not show against hemorrhages in general any where near as rapidly efficacious results as those of a large amount of the continuous current applied with the aid of a platinum electrode which cannot be oxydized, yet it may often

*Original abstract of paper read before the Academy of Medicine, Paris, October 5th, 1899.

be used with advantage against hemorrhages due to a congestive metritis or to an arrest in uterine involution.

4th.—Acting in a way analogous to and often superior to abdominal massage it may wisely be used in some cases of obstinate constipation and in some cases of amenorrhoea which do not yield to the galvano-cautery.

5th.—With no direct trophic action against the development of fibromata, it must give place to the galvano-cautery in the cure of these benign neoplasms, but it will produce the disappearance of certain congestive and painful symptoms which accompany their development.

6th.—Though powerless to correct directly descent or mal-position of the pelvic organs, it can, nevertheless, by reducing the congestion of the pelvis and exciting the contraction of the muscles, render in these cases real symptomatic relief.

7th.—Being very powerful against the lesions of peri-uterine congestion and exudation (non-suppurative) by the association of its analgesic action with its stimulant effects, it aids in the resorption of the exudate and is one of the best methods of conservative medicine.

To recapitulate, the frequent use of the undulating current during a period of three years in the clinic of Dr. Apostoli, enables him to affirm that this current, while being absolutely harmless and always well borne, deserves to take rank in the therapeutics of conservative gynecology because of the association of its two chief actions: On the one side, analgesic, on the other tending to resolution and the relief of congestion.

Although this current is less active than chemical galvano-cautery against fibromata in general, against infectious endometritis, against parenchymatous metritis and for the arrest of a rebellious hemorrhage, it deserves on the other hand marked preference in the treatment of uterine subinvolution, and it always acts for the disappearance more or less rapidly of symptoms of pain or congestion.

Whether looked at symptomatically or anatomically, the application of the undulating current within the uterus appears more efficient and tends more to resolution than similar applications made in the vagina.

Hence the undulating current which possesses the combined qualities of the faradic and galvanic currents, constitutes, accord-

ing to Dr. Apostoli, a valuable acquisition for conservative gynecologic therapeutics, and without supplanting either of the other kinds of electricity already well known, it deserves to occupy a choice place in electro-therapeutics.

BOOK REVIEWS.

"A Manual of the Diagnosis and Treatment of the Diseases of the Eye." By Edward Jackson, A.M., M.D. With 178 illustrations and two colored plates. Published by W. B. Saunders, 825 Walnut Street, Philadelphia. 1900. Price, \$2.50, net.

This book is intended for the general practitioner, and it is expected that he can find it of practical value; manifestly the rarer diseases and more difficult operations are therefore not so fully treated as the common ones. The subject is skilfully divided and each chapter considers one part. At the end of each chapter is a bibliography intended not to be complete, but to open up the subject to any student desirous of going on further and specifying the sources he may most easily employ. The book is well illustrated by drawings and microphotographs. One of the colored plates reveals very beautifully the signs of Albuminuric Retinitis, that sign so often of the greatest value in the prognosis of renal disease. By the sensible use of black faced type for headings on the pages, the publishers have added much to the ready value of the book.

Transactions of the Iowa State Medical Society. 48th Annual Session, 1899. Compiled by the Secretary, Dr. J. W. Cokenower, of Des Moines, Iowa.

This is a well-printed, attractive volume bound neatly in cloth and contains many valuable papers. Those which will most interest our readers are perhaps "Serum Treatment of Diphtheria," "Acute Idiopathic Albuminuria in Children," "The Use of Water in Pediatrics," "Spina Bifida," "Hip Joint Disease in General Practice," "Elective and Aseptic Obstetrics," "Puerperal Eclampsia," "Endometritis" and "Hysterectomy." The authors are men not in the large city hospitals, but men of wide individual experience and manifest culture and learning. We trust that some of them may contribute to our columns.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

SOME REMARKS ON HEREDITY.*

I. A. MACSWAIN, M.D.

MUCH has been said over this many-sided question, much more is needed.

Before the human race can break the fetters of ignorance and misguided training, a great revolution must be had both in the medical profession, and out of it.

We are met at the threshold with an ethical obstruction that bars the way to progress in this matter. That is, the medical profession, through which alone can come a knowledge which promotes the physical and to a large degree the psychical condition of mankind, has handicapped itself by declining to publish to the world the result of its researches. Discussions and papers on medical subjects are published only in medical books or journals, just such literature as the public is quite sure never to read. On almost every other subject, the intelligent man or woman of to-day may be reasonably well-informed by reading current literature. Every branch of industry, and all other professions, including also religion and politics, having free access to the daily press, and magazines, scatter their literature broadcast throughout the land, and educate the people everywhere on these various interests, and lines of thought. To add to this means are the pulpit, the lecture platform, the stage, and organized societies without number, whose chief aim is the dissemination of information for the public or for popular pleasure and recreation.

Not so with medicine. The public mind is not reached with medical knowledge. People know nothing of disease or its prevention. Questions of hygiene or the study of sanitary science have no place in common thought. Hence nature's laws

*Read at a meeting of the West Tennessee Medical and Surgical Association at Milan, Tenn., December 14, 1899.

not being understood are grossly violated continually, and that by an otherwise intelligent people. The penalties which are most certainly incurred affect not only the violators, but are entailed upon a helpless and innocent progeny, and this obtains a patrimony of conditions that perpetuate and intensify disease and hasten premature decay and death.

It will ever be thus so long as it is regarded as unethical for medical men to use the press and platform, or other means for the dissemination of truths that pertain to the preservation of the lives and health of the species.

To illustrate. A young lady about the age of twenty, has completed her studies in high school and college and takes her place in society. What does she know about wifehood or motherhood? Has any one, even her own mother, ever taught her the most primitive lessons in regard to sexuality, conception, pregnancy, parturition, or the care and training of a new-born babe? Or has she been cautioned of the evils that follow self-abuse, or the dangers and unhappy domestic relations that so often ensue from efforts to prevent child bearing? By no means, for such subjects are regarded as vulgar and immodest. She has not been taught in any sensible manner how to dress, for all this matter without regard to the physical development of the coming woman—or even her comfort, has been relegated to dame fashion, who appears to the giddy world as an angel of elegance and beauty, but to the scientific observer, this old dame is known to hide beneath her glittering trousseau the cloven foot of commercialism. So our young woman, since entering her teens, and previous to and during that most important period of puberty, has had her hair burned with hot irons, her thorax and abdomen encased in an unyielding corset, her feet cramped in ill-fitting, high-heeled shoes, and apparently every mechanism and energy possible has been expended in preventing normal growth and development of the woman, the future wife and mother. She takes her whirl in society and marries a man, that is, he appears to belong to that species of animals. In the joy of her young love, she has not investigated either his character or antecedents. To have done this would have detracted from the sentimentalism of the occasion, and so ignorance of his habits, instincts and diseases is at least for the time being rather blissful than otherwise.

In due process of time pregnancy ensues, and now pronounced

hereditary influences come into action. The combined physical, psychical and even moral qualities of the mother begin to interweave themselves in that mystic growth within the womb. The past comes down and sinks itself with the present, and for nine months they go hand in hand shaping the body and the elements of mind, and determining in a measure the destiny of the future man.

Wishing to appear genteel, and to conceal as long as possible her condition, this educated (?) woman tightens her corsets, and prevents as much as possible the growth of the fœtus by compression of the abdominal viscera, and likewise diminishing normal respiration and circulation at a time when more oxygen is needful, and when every organ of the body should be free from restraint. Thus the first months of pregnancy pass away, and in spite of her well-directed attempts at concealment, the time comes when it can no longer be accomplished.

And now comes into operation a social law, which is born of the most stupid ignorance, and enforced under false conceptions of propriety. That is, the woman who is so unfortunate (?) as to be child-bearing, must stay at home, shut off from the world, and must deprive herself of the benefits of civil and social life, from wholesome out-door exercise, fresh air and sunshine, and in her enforced imprisonment, spend weary weeks and months, deploring a condition that has made her obnoxious to the public, and sinks, perhaps, into despondency and gloom, and determines if possible never again to become pregnant. Indeed, the odium attached to child-bearing is so great, that every physician's office is besieged by this class of unfortunates (?) begging for some means to bring about an abortion. Will any medical man say that these conditions do not seriously affect the child?

Can a high point of physical vigor or mental or moral excellence be the product of such maternity?

Again, since the days of bacteriology, the question of immunity from, or susceptibility to disease, is, or should be, one of the chief studies of medical men. How best to fortify the system against the inroads of micro-organisms, and render it capable of adapting itself to its environments is today the largest factor in sanitary science.

In order to do this, everything contributing to a normal and healthy cell must be brought into requisition, and this process

must begin at that formative stage of existence that succeeds immediately upon the fixation of the fecundated ovum. To precede this, there must be a female form capable of transmitting to the foetus, the elements necessary to perfect self-formation, and as a pre-requisite, such a female must understand the principles governing human life, so that she may in her own person possess these creating forces.

Nature would abundantly supply these essentials, if the woman could be freed from the shackles of stupid ignorance, or the whims and caprices of fashion, and that inexorable law of one of the greatest despots of modern times, called society, that forces her into isolation and brings into contempt that which was designed by her creator to be her crowning glory, viz., the propagation and training of a noble race.

The physician should be the constant adviser of the woman, from the commencement to the close of her pregnancy. He should be prepared to dictate her food, her clothing, her exercises, her indulgences (sexual and otherwise). He should dare oppose a tyrannical custom that prohibits her from attendance at church or other places of resort, and should in every possible way condemn that puerile and foolish notion that to bear children is degrading to woman. People need to learn that barrenness is both a social and domestic evil and one to be deplored, and pregnant woman should esteem herself happy in bringing forth the legitimate fruit of the marriage relationship. The impress of heredity is perhaps the most potent factor in the universe. We are told that our first parents for a violation of one simple edict "brought death into our world and all our woe," and "That the iniquities of the fathers are visited on the children to remote generations," and indeed the principle is so far-reaching in its effects that man is not what environment makes him, but is to a large degree what heredity makes him.

This law holds good in the study of disease, not that disease, per se, is transmitted, but a peculiar cell structure, wherein lies immunity from, or susceptibility to, certain forms of disease, constitutes the heritage. Indeed, in its final analysis, the origin of disease may be said to proceed from two sources, heredity and environment, and as a capability to adjust oneself to environment, will depend largely on the natural powers of resistance the law of heredity will operate to modify the influences of environment.

In view of these statements we should consider some of the attainments possible to the medical man of the 20th century. He should become not merely a doctor, but a teacher. He must not be content to be called in after disease has fastened itself on its victim, to make what is often a hopeless defence against an adversary, that has entrenched himself in the constitutional dyscrasies of a long line of ancestry, but he will seek to interfere with the propagation of a species that perpetuate disease. To do this many laws and customs, civil and social, will be the subject of revisionment.

No marriage should ever be contracted without a clean health record involving both male and female. You say this would interfere with personal freedom? Quite true, so do all laws. Personal liberty should be tolerated to the highest possible degree so long as it does not conflict with the safety and happiness of others, but at that point it must needs be held in restraint by law. If, then, the marriage of people of evil habits, diseased constitutions, or mental disorders, results in peopling the commonwealth with murderers and drunkards, or those who fall a prey to such diseases as syphilis, cancer or tuberculosis—or those who from mental defects of the parents become insane, such curtailment is as much a proper subject for the operation of law as any other that involves the principle of protection of the innocent and helpless, and the advancement of the civilization of the nation.

If we are to attain to the highest degree of development as a people, the law makers must take into their councils the scientific medical man instead of the politician. He must be an indispensable factor in the management of schools, the building of houses, the inspection of foods; not least among his duties will be to dictate the fashions of dress. His mission in the world will not be that of "medicine man" only, but that of health officer, clothed with authority and power to enforce his mandates.

The intelligent gynecologist in his work of mutilating and removing broken down and diseased genital organs is a constant witness of the gross perversion of nature's laws, inconsiderate marriages and wicked attempts to destroy the contents of the gravid womb. He beholds the wreckage left in the wake of foolish mothers in their efforts to make their daughters leaders in fashion. In his grim collection of ovaries and tubes, he sees the harvest of marriage alliances with men whose sexual organs teemed with the loathsome germs of specific diseases.

In his hysterectomies for malignant diseases he is reminded of the merciless law of heredity, and while he converses with his patient and finds her perchance intelligent, he is amazed at her utter ignorance of the laws of her being, and his mind runs back to the village schoolmaster, to the high school and college whose elaborate curriculum embraced quite a lot of things, heterogeneous and homogeneous, but alas! did not include those essential factors, fundamental to the prosperity, happiness and longevity of a great people.

Had it been otherwise, as these rambling thoughts of a country doctor have imperfectly suggested (though to some they may appear visionary and utopian), we venture the opinion that many of the great infirmaries of the country now so much needed, could be dispensed with. Many homes, even luxurious in their appointments, but in which is a conspicuous absence of domestic harmony, would be vocal with the noise and bustle of vigorous and happy children.

Our prisons and almshouses would have fewer occupants, and taken together with advanced sanitary regulations, and strict methods of isolation and quarantine,—in other words, construct proper *environments* for the proper preservation of health and the prevention of infection, all of which to be effectual should be operated through a national bureau of public health and kept free from the tricks of the alert politician.

In that good time coming, disease shall be the exception and death shall come in a green old age, but it will come so gently as to suggest that toward evening the tired pilgrim "wrapped the drapery of his couch about him and lay down to pleasant dreams."

Paris, Tenn.

GASTRO-ENTERITIS COMPLICATING CONGENITAL SYPHILIS.

ROBERT W. HASTINGS, M.D.

The following cases came under my observation in the Boston Floating Hospital this last summer:

CASE I.—H. P. B., female, age 2 months. Admitted July 15. History of sickness for three or four days only. Diarrhœa and vomiting. Food has been a cream mixture. Yesterday began white of an egg in barley water, and vomiting is less. Has 4 or 5 loose watery, yellow, mucoid dejections daily. No blood.

Family history unknown except that father's first wife had three miscarriages.

Physical examination: much emaciated. Sutures wide open. Anterior fontanelle very large. Occipital bone depressed. Thrush in mouth. Rosary very marked. Heart and lungs negative. A bluish maculo-papular eruption on the buttocks and about arms. Glands enlarged.

Treatment: Whey, brandy and ugentum hydrarg. size of pea every night was at once begun. July 17th vomiting was so far checked that cream was added to the whey.

July 20. Paronechia developed on the tips of two fingers and were opened.

July 31. Has good appetite and is taking well a mixture of 3i cream, lime water ʒii and whey ʒii. The eruption has disappeared. During the first week in August she began to vomit again, and developed a subnormal temperature and weak pulse.

The mercury was discontinued, and stimulation by frequent small doses of nitroglycerine, strychnia and brandy was carefully attempted. Various foods were tried, including Eskay's food, well-diluted modified milk, albumen water, and barley water. There was no improvement, however, and finally nutrient enemas and warm sweet oil inunctions were resorted to, but she grew steadily weaker and died August 10.

CASE II.—R. L., female, age 2 months. Admitted July 25. History of six weeks' illness, much worse for last two weeks. Two days ago vomited persistently. This was checked by medicine,

but dejections are very frequent "every five minutes," dark green or black, very foul, watery, containing curds but no blood. For the first two weeks of life was fed at breast, but this was stopped because of illness of mother. Then had condensed milk and later malted milk, but vomited both.

Family history could not be obtained as they are Armenian.

Physical examination—Fairly well nourished. Anterior fontanelle soft and slightly depressed. Heart and lungs negative. Edge of liver felt half way from border of ribs to umbilicus. A macular eruption over whole body, also on soles and palms; erythematous about nose and eyes; diffuse infiltration of the skin of soles of feet; no coryza, lacheymation, cough or redness of throat; no glands felt.

Treatment at first consisted of a food containing the white of an egg, milk $\frac{3}{4}$ ss, a little milk sugar, brandy and water.

Infusion of ung. hydrarg. were begun as in Case I. July 31 the eruption had nearly gone and the blood condition was improved. But in a few days they again showed mucus and curds. Various remedies were tried by the mouth; calomel, essence of pepsin salol, bismuth, sulpho-carbolate of zinc, strychnia, borolyptol and orphol. For food, Eskay's food and a modified milk well diluted finally gave way to barley water, Bovinine or whey. The lower bowel was irrigated with plain water. This was sometimes followed by an enema of starchwater containing borolyptol or 20 grains of sub-gallate of bismuth. But nothing did much good. The child lost in weight; the dejections became more foul; the eruption persisted about buttocks, anus and vulva; temperature rose, and she died August 25.

CASE III.—J. H., Male, age 10 weeks. Admitted August 8. History of vomiting for 1 week, especially just after feeding. Food, condensed milk. Diarrhoea now very marked. Dejections are green with white curds; no slime or blood. Has been allowed blackberry wine, crackers and ice.

Family history.—Father says there never was any trouble till 14 months ago, when he and his wife went to the beach. While there his wife was bitten by flies, which caused a rash to come out on her. He caught this eruption from her and had papules on leg, thigh and scrotum which afterward became raw surfaces. He applied a salve which he obtained from a longshoreman, and was cured in about two weeks. His wife has had one miscarriage, caused by lifting a wash boiler, and one still-born child.

Physical examination.—Fairly well developed and nourished child. No sign of rhachitis. Anterior fontanelle two inches in diameter. Posterior fontanelle closed. Heart and lungs negative. On body, legs and soles of feet a round, flat, macular, slightly raised reddish eruption.

Treatment.—An attempt was made to clear the lower bowel by repeated small doses of calomel, and barley water was given for food. To this was later added modified milk with peptogenic milk powder. Dejections at first improved, but soon became foul again. A few doses of calomel, gr. 1-20, made them, on August 15, brownish yellow and smooth. A purulent discharge appeared from mouth, nose, and ears and a culture showed staphylococci. In the afternoon had five greenish yellow mucoid dejections. August 16 at 4.30 A.M. began to vomit and abdomen became much distended. Urine free. Rectal tube yielded no gas. Intestinal irrigation gave lumps of fæces and mucus. Vomiting became fæcal. Gastric lavage brought away a large quantity of greenish yellow matter resembling fæces and bile. Much relief followed this lavage. It was noted that the skin of the abdomen was of a greenish hue. Distention did not abate, and in spite of brandy, turpentine stupes and hot water bottles, the child died at 8 A.M.

CASE IV.—L. B. W., female, age 1 month. Admitted August 19. History of having been always sickly. For one week diarrhoea with green dejections. Lately these have been light green. No vomiting. Food has been at first Eskay's food, then rice water, and later a food like Mellin's food.

Family history.—Father says he has had syphilis for ten years. Has broken out again recently. First child was pronounced afflicted with congenital syphilis, second child was premature, and third child died of inanition. This baby has had an eruption.

Physical examination.—Poorly nourished; weight, 5 lbs. 3 oz. Anterior and posterior fontanelles and sutures open. Hands blue. Abdomen slightly distended and tense. Thrush in mouth. Heart and lungs negative.

Treatment.—Boracic acid mouth wash, peptonized modified milk well diluted, orphol. Later this last was omitted, as it was vomited and the dilution of the food was decreased. On August 23rd a macular eruption was noted on the buttocks, legs, hands and foot. These being few at first, and the family history being

the unknown, they were treated with ung. zinc. ox. Baths were omitted and sweet oil inunctions employed for cleansing purposes. August 26 the eruption was also papular and pustular, and was over the whole body, including palms and soles. A conjunctivitis also appeared. Inunctions were begun with ung. hydrarg. immediately after the father's story was obtained.

August 29 it is noted that the rash is over whole body, on the soles, palms, lips, around eyes, on ears, while it is specially marked about the anus, and is everywhere bright red. A fissure has appeared at the corner of the mouth, and marked "snuffles" are evident. Diarrhoea and vomiting reappeared, but not severely. Dejections were orange colored and smooth. The last note, August 31, is: "Took food splendidly till death occurred at 6.45 A.M."

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting November 10, 1899.

THE PRESIDENT, DR. E. E. GRAHAM, IN THE CHAIR.

Dr. I. M. Rotch, of Boston, read a paper on "Some Difficulties in Prescribing and in Modifying Milk for Infant Feeding."

The proteid of cow's milk has a higher nutritive value than the proteid in human milk; this ingredient, therefore, should be of a lower percentage in the milk-mixture than is found in human milk. Analysis of some of the infant foods were given, one corresponding closely with that of baked flour, the main difference between the two being in the price,—\$1.00 for the food and 5 cents for the flour per pound. The impossibility of any dried food being a good substitute for mother's milk was emphasized.

The importance was pointed out of knowing the percentages of composition of the milk employed, as otherwise variation in the ingredients might occur, ranging from 1 per cent to 1.5 per cent for the proteid, with even greater variations for the fat. These percentages are not known in the ordinary home supply of milk, but in the laboratories, such as exist in a number of the larger cities, a modified milk can be furnished with exact percentages;

if indigestion results in the artificial feeding of an infant, it is thus easier and possible to determine the ingredient at fault and to remedy it, than is the case in home modification, where it might be impossible. The value of properly modified milk was shown in the ability to start milk feeding very early in cases of gastro-enteritis after starvation for 24 hours with cleansing of the alimentary tract, good results being obtained in the Boston dispensaries during the past summer.

DISCUSSION.

DR. F. A. PACKARD referred to the encouragement which Dr. Rotch unconsciously gave to the attempt of the Society to establish a milk commission, in order that it would be possible to have a milk supply for infants in Philadelphia which would be of definite composition and purity, thus ensuing greater accuracy in the home modification of milk.

DR. J. C. P. GRIFFITH spoke of the value of Dr. Rotch's work and of the necessity of educating the laity up to the importance of having a pure milk supply.

DR. E. P. DAVIS thanked Dr. Rotch for the great aid furnished to obstetricians by modified milk, which is often of use during the puerperium when the mother's milk, through lack of exercise on her part, is too rich for the infant; modified milk can be used with great satisfaction until the mother is allowed to get up out of bed.

DR. T. S. WESTCOTT thought that if the laboratory would use the methods of home-modification, the milk would agree better in cases of chronic indigestion.

DR. R. C. NORRIS gave the results of his use of laboratory-milk during one summer in foundling department of Blockley, the children thriving for about three months and then apparently ceasing to gain in spite of careful changes in the modification.

(*The Philadelphia Medical Journal*, Dec. 2, 1899.)

REVIEW OF PEDIATRY.

TREATMENT OF CONSTIPATION IN INFANTS AND YOUNG CHILDREN.

Dr. C. G. Slagle says: "Probably the best means of overcoming constipation in young children (as suggested by Holt) are diet, habit, massage and an occasional enema, or suppository. Diet can be rendered laxative by the addition of some of the malt preparations, fruit juice, etc., or of milk by adding cream and sugar water (one or both). If a child two or more years old, less white bread, toast, crackers, potatoes, etc., and more green vegetables, oatmeal, graham, corn or rye bread, and no opiates and carminatives—as astringent teas, etc. The gluten suppositories of the Health Food Company are best for continuous use, as glycerine suppositories are too irritating to be long continued.

The alimentary of nurslings: A little sugar water (after Jacobi), cow's milk four parts to one of sugar water, and rectal lavage with a urethral catheter (two tablespoonfuls of glycerine to one litre of warm water), or two tablespoonfuls of olive oil with the yolk of one egg to four drachms of water, etc.

Massage by rubbing the abdomen in one of two ways has been recommended by Holt: thus beginning at the right groin, the hand is carried up to the ribs, then across to the opposite side, then down to the left groin, superficially at first, then with deeper pressure as the child becomes accustomed to it. The second method is by rubbing the deeper parts with a circular movement, the fingers, not moving on the skin, making a series of small circles, beginning at the right groin and following the same course as in the other method, these movements to be employed six or eight minutes twice daily at any time, excepting never soon after a meal.

For special movement of the bowels in an infant or young child, an injection of sweet oil, a tablespoonful, or glycerine, one-half teaspoonful to a tablespoonful of warm water, or tepid soap and water, a gill to a pint, according to age, or a glycerine suppository, may be employed, but none of these are to be used

habitually, only occasionally in emergencies, to supplement other less objectionable measures, while you are endeavoring to establish "a moving habit" of natural movement.

This subject, constipation, emphasizes the importance of studying children's diseases separate and apart from those of adults, as the causes, nature and management are very markedly diverse from those of later life."—*Northwestern Lancet, September, 1899.*

GASTRIC DISEASES IN CHILDHOOD.

Dr. Andrew Von Grimm, in an article on this subject, makes many suggestions as to medicinal treatment. Of these we quote a few:

For Functional Dyspepsia.

R	Pepsin. pur.	gr. vii
	Ac. Hydrochlor.	3ss
	Aq. dest.	3iii

M. Sig. A teaspoonful after each feeding.

Also	R	Calomel	gr. 1-10- $\frac{1}{2}$
		Mag. Carb.	gr. v
		Ft. chart, tal. No. V; Sig. one every hour.	

For washing out stomach.

	R	Natr. Benzoic	1-100
or	R	Ac. Boric	2-500
or	R	Natr. Chlor.	5-100

For bad odor in mouth.

R	Resorein	gr. i-iii
	Infus. Chamomil	3iii
	Tr. Cinnam.	3ss
	Tr. Opii.	m ii-iv

M. Sig. 1 teaspoonful every 2 hours.

or	R	Natr. Benzoate	3ss
		Aq. Menth, Pip.	3ss
		Aq. dest.	3iii

M. Sig. 1 tablespoonful after each feeding.

If reaction of contents of stomach is neutral or slightly acid.

R	Ac. Lactic	gr. xv
	Aq. dest.	3iv

M. Sig. 1 teaspoonful every 2 hours.

If vomitus is only slightly changed milk, while stools are foul smelling.

	R	Ac. Hydrochlor.	3ss-3i
		Spts. aeth. nit.	gtt. xx
		Syr. Simpl.	3ss
		Aq. dest.	3iv
M.		Sig. 1 teaspoonful every 2 hours.	

For Acute Gastric Catarrh when without Fever.

	R	Ac. Tartar.	1.00
		Syr. Rubi Idaci.	20.00
		Aq. Laurocer	2.00
		Aq. dest.	100.00

M. Sig. I teaspoonful or more every two hours, according to age of child.

When with fever.

	R	Quinin. Mur.	0.50-1.00
		Ac. Hydrochlor.	0.50
		Syr. Rubi. Idaci.	10.00
		Aq. dest.	90.00
M.		Sig. Small teaspoonful every two hours.	

For Chronic Gastric Catarrh.

	R	Quinin. Sulphate	0.20
		Zinc. Sulphate	0.10
		Sacchar Alb.	3.00

M. Ft. pulv. div. in dos. x.
Sig. One powder before each meal.

For Cholera Infantum.

For poor circulation.

	R	Aether. Acet.	5.00
		Ol. Cinnam.	15.00
M.		Sig. Three to five drops every half hour.	
or	R	Quinin. Sulphate.	
		Camphor.	aa 1.00
		Gum. Acaciae, pulv.	
M.		Sacchar. alb.	aa 2.00
		Ft. pulv. div. in dos. x.	
		Sig. One powder every hour.	

For washing out stomach.

	R	Ac. Muriat. dil.	1.00
		Aq. dest.	200.00
or	R	Resorcin	0.05-0.10
		Aq. dest.	200.00

or	℞	Natr. Chlor.	4.00
		Natr. Carbon.	3.00
		Aq. dest.	1000.00

For washing out lower bowel by irrigation use.

	℞	Tannin pur.	10.00-20.00
		Aq. dest.	1000.
or	℞	Ac. Hydrochlor. dil.	5.00
		Aq. dest.	1000.00

or if only foul.

	℞	Resorcin	1.00
		Aq. dest.	1000.00

For disinfecting intestines.

	℞	Cresote	gtt. 5-6
		Aq. dest.	90.00
		Syr. Simpl.	
		Aq. Ment. Pip.	aa 5.00

M. Sig. 1 teaspoonful every two hours.

(*The Post-Graduate*, September, 1899.)

BOOK REVIEWS.

"Treatise on Orthopedic Surgery." By Edward H. Bradford, M.D., and Robert W. Lovett, M.D. Illustrated by 621 engravings. Second revised edition. Published by William Wood & Co., New York. 1899. Price, \$4.50 net.

The nine years which have elapsed since the first edition of this treatise have added not a little to the reputation of its authors, as well as to the general knowledge of the profession in this line. The marked advance in aseptic surgery, the development of many new forms of apparatus, the recognition of the true causes and actual conditions in deformities heretofore considered irremediable, the demonstration of the great value of persistent exercise of special muscles and sets of muscles,—these are but a few of the marks of progress. The illustrations are excellent, the descriptions of the operative procedures full and accurate, and the book as a whole a credit to authors and publishers.

"The Physician's Visiting List for 1900"—Forty-ninth year of its publication. Published by P. Blakeston's Son & Co., 1012 Walnut Street, Philadelphia. Price: Regular edition for 25 patients \$1.00, for 50 patients \$1.25.

Once again we have the pleasure of commending to our readers the Lindsay Blakiston Visiting List. It needs no description. In

a careful examination of this edition we fail to detect any changes, save in dates, from that most successful and complete one of 1899. If you had that, you will get this. If you did not have that, you should get this just the same.

"Shall We Drink Wine"? A Physician's Study of the Alcohol Question. By Dr. Jno. Madden, Professor of Physiology in the Wisconsin College of Physicians and Surgeons. Published by Owen & Weihbrecht Co., Milwaukee. 1899.

This is a careful and thoughtful consideration of a question which we all recognize as one of the most vital to health. With most of it we believe educated physicians will agree, and be thankful for the skilful presentation of their own working theories. Many of us are not yet ready, however, to deny the value of alcohol as a stimulant, in spite of the array of authority which Dr. Madden presents. In his claim that alcohol is a narcotic and not a stimulant, he must meet such men as Hare, Potter, White and Brunton.

"The Surgical Diseases of the Genito-Urinary Tract, Venereal and Sexual Diseases." A Text-book for Students and Practitioners. By G. Frank Lydston, M.D., Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois. Illustrated with 233 Engravings. Extra Cloth, \$5.00 net. Published by The F. A. Davis Co., 1914-16 Cherry Street, Philadelphia. 1899.

The author of this very complete and readable volume is well known to the profession by his numerous contributions to current medical magazine literature. The subjects covered are such as meet every physician. Some of us are not called on to treat many cases of syphilis or gonorrhœa, and to such the considerable portions of the book which treat of other diseased conditions of this tract will be of most interest. Such are the chapters on Genito-Urinary and Sexual Hygiene," and "Hematuria." The functional diseased conditions, the Prostrate, Seminal Vesicles, Bladder and Testes have each several interesting chapters. Venereal Diseases have thirteen chapters and over 400 pages devoted to them. This bare outline will suffice to show that our first adjective "complete" is not inappropriate. Tried prescriptions and other remedial measures are numerous. Our author is independent in the statement of his own beliefs and experiences, but also quotes freely and widely from established authorities and clinical reports.

"Conservative Gynecology and Electro-Therapeutics." By G. Betton Massey, M.D. Third Edition. Illustrated. Published by F. A. Davis Co., 1914 Cherry Street, Philadelphia. 1898.

The title might well substitute "or" for "and" as the author evidently feels that electricity is the great remedy for female pelvic diseases. In his hands it has manifestly produced marvelous results. That many other gynecologists have not had equal success, and so consider conservative gynecological surgery the best field today, may be due to faulty application of these so little understood electrical forces. Dr. Massey devotes nearly 100 pages in Part II. to the "Rudiments of Medical Electricity." The practicing physician who does not feel competent to do abdominal surgery, and there are still some such, will find in this volume much to interest and assist him. We would urge such men, however, to watch their patients most carefully and when they steadily grow worse not to delay getting the advice of a competent surgeon. The book is well illustrated from plates made specially for it, including 12 half-tones and as many chromolithographs.

"Lectures Upon the Principles of Surgery." By Charles B. Nancrede, A.M., M.D., LL.D., Professor of Surgery and Clinical Surgery in the University of Michigan. With an Appendix containing a résumé of the principal views held concerning inflammation, by William A. Spitzley, A.B., M.D. Illustrated. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price, \$2.50 net.

This is a volume in which the author endeavors to keep close to his theme. Pathology, bacteriology and other allied subjects are not discussed. Their aid is, of course, invoked at many points, but no diversion from the main theme is allowed. We welcome the book as the record of the views of a prominent surgeon and teacher. The Western schools of medicine are every year becoming more important in our medical education, and few men are more honored out there than Dr. Nancrede. The "course" includes 36 lectures, and covers fully and in logical sequence the usual surgical outline. The appendix is an interesting historical contribution.

"Our Baby": for Mothers and Nurses. By Mrs. Langton Hewer. Sixth edition—revised. Published by John Wright & Co., Bristol, England. 1899. Price, 1s. 6d.

We are glad to see this little volume which in eight years has been through so many editions across the water. This mere fact shows its popularity. Unlike some other books of this kind, this

one distinctly disavows any purpose to replace the physician or his advice. Hence in most cases the doses of medicines are omitted. Dress, food, exercise, sleep, size, bed, nurse, ailments, accidents, diseases and medicines have each well-written, sensible chapters. It is a book which physicians may recommend, but which should not be a substitute for medical supervision.

"An American Text-Book of Surgery for Practitioners and Students." Edited by William W. Keen, M.D., LL.D., and J. William White, M.D., Ph.D. Third edition—thoroughly revised. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1899. Price, Cloth, \$7.00. Sheep or $\frac{1}{2}$ m, \$8.00 net.

With the editors are associated such men as Conner, Dennis, Nancrede, Park, Pilcher, Senn, Shepherd, Stimson and Warren. Truly a remarkable body of men. We feel that congratulations are due to editors and publishers for securing such able assistance. Among the new subjects fully discussed we note, orrho-(serum) therapy, the use of dry heat at high temperatures, lumbar puncture, forcible reposition of spine in Pott's disease, goitre, surgery of typhoid fever, gastrectomy, surgery of the ureter, Schleich's infiltration method of anæsthesia, minor details of disinfecting the hands, and the use of gloves. There are many others which might just as well be mentioned did space permit. So much have these additions together with the revision enlarged the book, that in this edition the chapters on surgery of the eye and ear have been omitted. The general practitioner will regret this omission, but the surgeon will rarely feel it. The same high standard of make-up seen in the other editions and in the other "American Text-Book" of this publisher is here everywhere manifest.

"A Text-Book of Materia Medica, Therapeutics, and Pharmacology." By George F. Butler, Ph.G., M.D., Professor of Materia Medica and of Clinical Medicine in the College of Physicians, Chicago. 860 pages. Illustrated. Cloth, \$4.00 net; Sheep or Half Morocco, \$5.00 net. Third edition—revised. Published by W. B. Saunders, 925 Walnut Street, Philadelphia.

The third edition of this excellent work has been carefully revised and brought up to date. The arrangement of the drugs is according to a classification based on their therapeutic affinities, which is convenient and practical. The new remedies which modern chemistry has given us are carefully considered, and take the place of various obsolete and practically worthless drugs which have been omitted, after occupying space in works of this description from time immemorial. The chapter on prescribing is particularly good, and those on alteratives (serum therapy), antiseptics, antipyretics and narcotics will repay careful study.

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ORIGINAL COMMUNICATIONS

SUPRAVAGINAL HYSTERO-MYOMECTOMY.*

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SUPRAVAGINAL hysterectomy has become a deservedly popular operation because the mortality in good hands has been greatly reduced until it now may be compared with that of ovariectomy. It is quite possible with perfectly aseptic suture and ligature material, or one of the methods of "compression" or "crushing" the pedicles, we may still further reduce the mortality. In properly selected cases a hysterectomy need not be considered a dangerous operation. By this we mean when the patient has all other organs in good condition, and the tumor not very large and apparently without extensive adhesions to the abdominal viscera. On the other hand, when such adhesions, or other complications are present, the danger from operation of course is relatively increased. As more time is usually required for hysterectomy or myomectomy, and greater traumatism produced than in ovariectomy, we will find it difficult to reduce the mortality to that of ovariectomy. These preliminary remarks may serve as an introduction to the consideration of the subject proper of this paper; for we wish to invite your attention to what is now called hystero-myomectomy, which is proposed by some authorities as a substitute in many

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cases for hysterectomy. If a tumor has a fairly good pedicle, any operator would prefer that myomectomy should be performed. But we find that some surgeons have from time to time not only proposed enucleation of interstitial fibromyomata, but have invaded the walls and cavity of the uterus in every direction for the removal of these growths, until in some instances the organ has almost undergone complete morcellation. It is this practice that we wish to call in question, as it is probably safer to remove the organ than to make many incisions into its walls, interfere with its blood supply, and possibly favor the direct introduction of sepsis from its cavity. We are theoretically correct in our desire to leave an organ capable of child-bearing, but do we not invite disaster by carrying the measure too far? By these remarks we do not wish to oppose the removal of one or many subperitoneal fibroids, for it is not of these we are speaking. It is the interstitial variety, or those which involve the uterine walls, and perhaps may necessitate one or more sections into the cavity of the organ. We are opposed to excessive traumatism of the uterus, and believe that each incision into the walls of the uterus or into its cavity, adds additional danger from sepsis. For illustration we call to your attention cases V. and VI. These cases would almost certainly have recovered from hysterectomy, but died because too much so-called conservatism was practiced.

In case number V. the tumor filled the pelvis and reached half way to the umbilicus. Upon opening the abdomen the typical multi-nodular fibroma was found. As we desired to leave all the organs, the usual myomectomy was performed, but this required many incisions into the walls of the uterus, and consequently very many sutures were used. The uterine canal was opened more than once, although care was taken to avoid unnecessary injury to the endometrium, and to avoid the introduction of infectious material. The uterus was finally left nearly normal in size, and I was delighted with the prospect of a triumph for conservative surgery. The operation lasted rather more than one hour, and quite as much, or possibly more, blood was lost than if hysterectomy had been performed. The patient's pulse soon quickened and the condition of the patient went from bad to worse until her death, which occurred on the fifth day, due to systemic intoxication very much like a case of puerperal infection.

Case number VI., also fatal, was much like the one above mentioned, and it is not necessary to give particulars. Neither case had peritonitis and the autopsy revealed what was expected, general septic infection of the pelvic organs, especially the broad ligaments and subperitoneal cellular tissue. The result in case VIII., although fatal, should not be considered with the other cases reported. The death was due to bowel obstruction after myomectomy, performed during the fifth month of pregnancy. A loop of bowel was caught between the large uterus and the pelvic brim, causing death in five days after the operation. Two deaths were clearly due to my endeavor to save the uterus. A third would have fared better if hysterectomy had been done as now practiced. Although one of the most difficult cases for any method, we are convinced that less blood would have been lost if the large vessels had all been clamped or tied before attempting the removal of the tumors. As a result of these lessons may we not urge less mutilation of the uterus, and may we not do better to leave a few small interstitial growths than to cut the uterus in many places, and imperil the life of the patient unnecessarily? Dr. Senn, of Chicago, and Dr. Alexander, of England, and perhaps many other surgeons, since the early work of Schroeder, have suggested various methods of performing myomectomy, nearly all of which involve the so-called extra peritoneal method of treating the cavity made by removal of the growth. The peritoneum is sutured in such cases, to the capsule of the tumor. Such surgery does not appeal to us now, and we only mention this method in order to condemn it. In conclusion, we would recommend hystero-myomectomy for those tumors which may either have pedicles, or do not require extensive mutilation of the uterus. Pregnancy does occur after myomectomy, and case number IV. has borne two healthy children at full term. But of the eight who survived operation, this one patient has conceived, although it is but fair to state two of these are not married.*

CASE I., Mrs. F., May, 1891.—Large tumor reaching above umbilicus. Enucleation of several subperitoneal and interstitial myomata. The uterus finally reduced to nearly normal size. The

*These cases are reported solely with reference to the effect of operation. They were patients in good condition for operation; in fact, the operations may be called "elective."

peritoneum sutured to the capsule. Gauze packing. Rather slow but perfectly satisfactory recovery.

CASE II.—Miss S., June, 1891.—Large soft myomata with pedicle. Excision of the pedicle, opening cavity of uterus. This patient had ascites, and glass drainage tube remained in situ for several days. Perfect result.

CASE III., Mrs. W., November 9, 1891.—The tumor in this case nearly filled the abdomen. The growth consisted of many lesser tumors, both subperitoneal and interstitial, besides the intraligamentary variety. This aggregation of tumors presented one of the most formidable tasks ever seen or undertaken by the writer. If we had a similar case today we would begin by searching for the large vessels, and after clamping or ligating them, proceed with a hysterectomy. However, the determination was to leave the uterus at any cost, and consequently the traumatism, loss of blood and shock was too great for the patient to bear. The pathologist reported her death due to acute yellow atrophy of the liver. But I think he was perhaps kind enough not to say that the surgery was responsible for her death.

CASE IV., Mrs. H., November 15, 1893.—The tumor in this case pretty well filled the abdomen and was fastened by adhesions to nearly everything within reach. Nearly all of the large omentum was removed with the growth, and the uterine cavity was invaded at the right uterine cornu. A large opening was made in the hypertrophied uterus, but this was easily closed and a large flap of peritoneum, consisting of a portion of the loose capsule, was sutured over this, making an excellent closure. After some days of shock this patient rallied, is in good health, and has since borne two children at term. The tumor weighed 14 pounds.

CASE V., 1897.—Mrs. T. had a tumor filling the pelvis and extending about half way to the umbilicus. A myomectomy was attempted and apparently successfully completed. The uterus was filled with many small tumors and its walls severely lacerated in many places, requiring very many sutures. The uterus should have been removed. The patient died of sepsis.

CASE VI., Mrs. J., June 16, 1897.—This case is almost exactly in all respects like the one preceding, and died of sepsis.

CASE VII., Mrs. L., November 17, 1897.—A myoma with rather small pedicle. Excision of pedicle. Prompt recovery.

CASE VIII., Mrs. M., May, 1898.—Myomectomy for removal of three myomata attached to the uterus containing foetus at four and one-half months. The growths were easily removed and although attached to muscular tissue, were not deeply imbedded, and we are confident the patient would have recovered but for the accident of bowel obstruction. In returning the uterus to the abdomen and pelvis, great difficulty was encountered in closing the incision on account of the size of the pregnant womb. A loop of bowel was caught under the uterus, and between that organ and the brim of the pelvis on the right side, causing fatal obstruction. One of the myomata had its bed low down in the pelvis and had pushed the uterus far up above the pubis, necessitating operation.

CASE IX., Mrs. N., October 14, 1898.—Interstitial and subperitoneal fibroids requiring extensive laceration of uterus but without opening its cavity. Pus sacs also removed. Weight of tumor, $2\frac{1}{2}$ pounds. Recovery without interruption.

CASE X., Mrs. P., January 13, 1899.—This patient had an unusual variety of pathological conditions. A large fibroma of the left ovary. A dermoid ovarian cyst weighing 3 pounds on the right side. A fibromyoma of the left uterine cornu requiring extensive dissection into the uterus for its removal. The uterus was not entirely reduced to its normal size. The cavity was very slightly if at all opened. The patient recovered very satisfactorily.

CASE XI., Mrs. B., March 20, 1899. A pedunculated myoma weighing three pounds, springing from the fundus, requiring incision into the cavity of the uterus. The tumor was also attached to a loop of ileum, requiring resection of the bowel, as the appearance of the growth indicated malignant degeneration. The patient recovered promptly.

CASE XII., Mrs. Q., May 21, 1899.—Two interstitial myomata removed from anterior and posterior uterine walls; both tumors projecting into the cavity. The bladder was temporarily removed from the anterior surface of the uterus to permit the section necessary for removal of one tumor. Several small subperitoneal growths also removed. The combined weight of the several specimens was 14 ounces. Recovery without interruption.

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INTRA-ABDOMINAL ADHESIONS.*

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No complication nor condition occurring within the abdominal cavity is of more moment to the physician, or surgeon, than the adhesions that link different organs together, causing the merging of similar parts into continuity; or fusing separate structures into one conglomerate whole. The condition may be an invasion of peritonitis from diseased organs underneath the peritoneum, or on the free surface of the membrane, as from a bursting cyst or abscess. It may result from trauma, as from a blow, an injury, a wound of whatever nature, or from medicinal agents of too intensely irritating action, or too paralyzing in their effects. Any position assumed on this subject is a sectional or partial view; not a complete exposition of the subject of peritonitis, on which abdominal adhesions depend. It is interesting to recur to the subject of the treatment of peritonitis as practiced a quarter of a century since, when allaying pain with opiates, the production of absorption with electrical currents and massage, and alteratives was in vogue. The use of opium in some form and for many manifestations of this dire malady still curses our therapeutics. It clings with an unparalleled pertinacity to the medical mind, and has slain thousands by covering its own mistakes and short comings, and staying the hand of correct therapeutics or surgical skill. The grades of peritoneal inflammation gives in gross appearance, the spot, the transudation of serum and plastic material, congestion, and exudation. It may be followed by suppuration, or by a retrograde metamorphosis. Usually partial, though sometimes probably complete reabsorption of the inflammatory products ensues. Abdominal adhesions are always the consequence of a preceding peritonitis. The location of intra-abdominal adhesions is of interest as regards their effects. When located below in the region of the appendix, or the appendages, of themselves, they cause less pain

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than when located above, because of the action of the diaphragm in the act of respiration on the abdominal contents and any co-existing adhesions. The form of adhesions may be flat, velamentous or band-like. They may agglutinate parts or suspend structures or encircle organs. The omentum with its ramifications of vessels and nerves has a function all its own in its intricate method of conserving nature by shutting off foci of danger and forming barrier adhesions. This function is illustrated when the omentum passes as an enveloping apron into the appendicular region and in a mothering way covers in the filth deposit of an involved appendix. For some peculiar reasons no abdominal lesion nor disease has a barrier so strongly fortified, thrown up in its defense.

Operative procedures have taught us all we know regarding abdominal adhesions, their causes, removal and treatment. They have in this instance revolutionized all plans and measures. Opium and paresis of bowel have given place to calomel and salines. The alimentary tract is kept quiet by starvation from withholding food or by the restriction of diet, to easily assimilated food. An increase of peristalsis with transudation of serum is relied upon to prevent adhesions and drain congested areas. The adhesions resulting from cicatrices after abdominal operations may be caused by the methods used in closing the incision and commonly results from a small bit of omentum becoming incarcerated in the lips of the wound under a suture. The simplest method of closure is the best, and the one where the eye can see clearest and the finger guide most surely will meet the indications. An old scar that puckers and draws in, when patient on examination coughs or laughs, is an unanswerable argument against the method or care employed in the closing of that particular incision. And it means that its possessor suffers misery because of the adhesion underneath. The health will become impaired from reflex irritation, from anæmia, attacks of indigestion, sleeplessness and generally bad nutrition. Local adhesions may become established from infected ligatures with their resulting sinuses, or from raw surfaces becoming adherent through adjacent structures. The prevention and limitation of these risks taxes our skill and resources. When incurred either by accident or bad method, they consign the unfortunate victim to a life uncom-

fortable in all waking hours; perhaps miserable, unless the attention is diverted and the mind absorbed in exterior pursuits and objects. Respiration, movement of the abdominal muscles, sudden jars and involuntary motions, and many positions of the body when in a recumbent posture, because of the tendency to drag upon the guy-lines, makes these intra-abdominal adhesions grave lesions. On the sympathetic nervous system their influences induce anæmia, pallor, disorders of the nutritive functions and occasional attacks of nausea and vomiting. This is a purely mechanical matter, and is to be so dealt with to the exclusion of all medical measures. Within the abdominal cavity the best methods of sundering adhesions are the simplest. The fingers are the best instruments, but undue handling will induce adhesions. Make removals complete, flush well with non-irritating fluids and drain carefully. Failure to drain leaves blood and serum to form organized deposits, or leaves septic material to threaten the organism or involve it in danger. Inverting a patient whose veins are thus unstopped, that the better fingers may be aided with eyes that should have no better vision, is paralysed by a fad of continuing the inversion of the body, that an obscure group of recently discovered stomata somewhere posterior to the stomach may absorb, assimilate and appropriate any form of toxine or devitalized fluid. While to fill the abdominal cavity with saline solutions has seemed to help the plan, its claim for success in general septic peritonitis is not surely proven. The problem of proper drainage of the peritoneal cavity is unsolved. The benefit to accrue to humanity from a drainage that is harmless and efficient cannot be estimated, but it seems absolutely essential in some form to the cure of general septic peritonitis and the prevention of peritoneal adhesions.

Drainage from the intestinal mucous membrane with salines and their congeners relieves its congestion, and neutralizes and destroys the pabulum of disease. If to this could be joined an equally effective method of cleansing the abdominal cavity from blood, serum and pus, an immaculate technique would be found. Our best method now, if carefully performed, is by means of the perforated glass drainage tube, and the long nozzle syringe, and with the gauze drain, or both. The exits of these drains are to be under the eye at any necessary time. The principle to be laid

down is the use of such simple means and methods as will effect the result without introduction of an element of doubt or chance, or trusting too much to plans, which seem to beg the question, rather than meet the sure demand. There are mooted points in the technique of abdominal operations which bear upon the question of abdominal adhesions, a few of which are pertinent. Complete extirpation lessens the danger of recurrent disease, while matching, morcellation and one-sided removals invite all the dangers of immediate or remote adhesions. Every suture or ligature left within the abdominal cavity risks a similar mischief, and none that are unnecessary should ever be used. It is doubtful if the extra peritoneal treatment of the stump in hysterectomy where no ligature is left in the abdominal cavity, except perhaps the one which affixes the stump to the peritoneum above, will ever be equalled as a prevention of late adhesions in this operation, notwithstanding the statements made of late, which are not true, that the method is not now being successfully applied by American surgeons of world-wide repute.

The surgery of the appendix requires early and clean removal with the greatest care as to the separation of all adhesions; the thorough cleansing of the involved segment of the abdomen and as careful drainage in a similar way as all other pelvic operations, and probably the drain should extend to the depth of the pelvis basin and emerging from the same median line, as has been most eminently satisfactory in drainage for other pelvic complications; because failure to irrigate and properly drain the deeper pelvis makes asepsis impossible and favors the retention and formation of products that are incidental, but whose organization is to be deplored as it encourages peritoneal adhesions. Friction or violence of the omentum or the abdominal contents, together with the use of irritating fluids, induces an element other than simplicity and should be guardedly undertaken.

Adhesions resulting from the use of gauze and other drains will often disappear, and all adhesions should give positive indications of danger or harm before subjecting their possessor to the knife.

Adhesions, if thoroughly organized and of such an agglutinating and extensive character as loops of bound down intestines, whose functions have been continued, may sometimes be left un-

disturbed. But band and suspending adhesions must be corrected. When we consider the peculiar reflexes which give both local and constitutional results, we can mention but to condemn the practice of suspending an organ by a carefully planned adhesion. It is unsatisfactory in its results, dangerous in its possibilities, and leaves the cause of the condition unsought and unrelieved, except at the hand of the doubtful mechanical expedient.

This procedure represents, in a surgical way, what opiates do in a medical; opiates by inducing a paresis of the bowels through interruption of peristalsis and the disturbance of the intestinal currents, causes stasis of the intestinal contents, with fermentation, gasformation, and decomposition of food products. Sepsis increases rapidly and auto-intoxication follows.

It is possible that abdominal adhesions from whatever source bear close relations as a factor to the production of malignant disease. The prevention of adhesions require that all raw surfaces be covered and possibly dusted with powder, which lessens tendency to union. That bleeding be checked by careful suturing or ligation, and oozing be stopped by exposure to the air, hot water, or gauze pressure; while open treatment with drainage completes the toilet. Drained cases always are safest and least painful. Later adhesions are to be watched and radical interference applied according to the methods of treating the primary causes.

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MEDDLESOME GYNECOLOGY.*

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WHEN one takes into consideration what has been accomplished in gynecology in the last twenty years, and what strides have been made since the advent of aseptic surgery, in making the diagnosis of female troubles possible, by placing them upon the broad and scientific grounds of general pathology, we may well imagine what a prolific field for mistakes there must have been between the gynecology of caustics, sounds and pessaries of the older

*Read before the Buffalo Medical Club.

practitioners and the modern student of today. The pathology of Goupil and Bernutz did much to place diseases of women upon a practical and scientific foundation, and rendered the means of combating disease and its dreadful complications, in a measure, certain and expeditious. Accepting with them, that the vast majority of pelvic inflammations commence in the endometrium and extend by continuity of tissue to the tubes, ovaries and peritoneum, their solution, prevention and rational treatment became more simple and definite. A smaller class of inflammatory troubles, however, extend by the lymphatics of the cervix and body of the uterus, along the broad ligament to the peritoneal cavity, having their exciting focal point in traumas, tears and injuries of these structures, making often large inflammatory exudates or collections of pus, perhaps circumscribed in the peritoneal cavity, and leaving the tubes and ovaries free and practically in a healthy condition. Such an experience I had a few months ago as a result of infection consequent upon labor, when upon a section two months after the confinement, a large collection of pus was found in front of the uterus, its roof and sides being closed in by the adherent omentum, while the tubes and fimbriæ, as well as the ovaries were free and healthy. In our enthusiasm to accept that which is new, we often forget the splendid work of our old masters, and consequently the pelvic cellulitis of early pathologists has been too much disregarded by our modern teachers and is often alluded to by them as a myth, and as the creation of unskilled diagnosticians. This case of mine, like others which are occasionally reported in the journals, is another example of infection passing through other channels than by mere continuity of tissue. Add to this, the role paid by the various infectious micro-organisms and the capacity for their development upon favorable soils, and we will at once see one of the greatest dangers in connection with the therapeutics of the older school of practitioners, who believed and advocated that the uterine cavity could be invaded with sounds, applicators and syringes, and various local treatments made without any special danger or harm. However, with the new pathology came increased wisdom, and with it the greatest respect for the vulnerability of the endometrial mucous membrane, a knowledge which teaches us that although it may suffer all kinds of abuses without any serious reactions sometimes, yet sooner or later, the most

serious consequence will result from the most trivial injury. The symptomatology of uterine disease is complex and many-sided, some of its symptoms are manifested in the organ itself, while others partake of the most diversified reflex phenomena. However, upon careful enquiry, certain prominent symptoms often suggest themselves, which point strongly to certain definite lesions, as for instance, the hemorrhage in fibroid tumor, the dysmenorrhœa in endometrial affections of the cervix and body of the uterus, the reflex symptoms, and often to most remote organs, from displacements. The uterine syndroma of Pozzi embraces certain general symptoms which accompany pelvic diseases and may be said to be pain, leucorrhœa, dysmenorrhœa, metrorrhagia, symptoms from neighboring organs, as the bladder and rectum, and from distant organs as the stomach and digestive tract, and the nervous system generally. Unfortunately many of these symptoms are present in other conditions than true uterine, tubal or ovarian disease, and therefore their sources must be sought, and if possible, understood and carefully studied out.

Unfortunately, women as a class assume that most of their distress, pain and suffering originates in, or results from, their genital organs, and look upon their sex as a providential curse. They are, therefore, always ready to believe, with but little encouragement, that some special disorder exists, and thus they become the victims of unnecessary and painful examinations and much needless local treatment, or as Price would say "gynecological tinkering." Pain in the ovarian region, dysmenorrhœa, leucorrhœa and backache are often but the expression of a poorly-nourished body and an unbalanced nervous system, worn out by excessive cares and anxieties, and driven to exhaustion by unrequited affection and domestic infelicity. Medicine being an inexact science, commands many agencies, potent for good and often fraught with harm, and these are placed into the hands of careless, unqualified and often unscrupulous medical men, and as a result, simple functional disorders are converted into gross lesions which only skilful and desperate surgical procedures can remedy. Pain is no doubt the most frequent symptom which we are called upon to treat, and is the one which most readily begets our sympathy, and should have our best professional thought. It is a symptom of so many varied conditions, and is so complex in its origin, being often most acute in purely functional disturb-

ances, that it is frequently assumed to be the expression of some serious lesion, and as a result, many needless mutilating operations have been vainly tried for its relief. Lomer, of Hamburg, has beautifully studied this question, and has written two most valuable articles, which are to be found in the April and May (1899) numbers of the Journal of Obstetrics and Gynecology, and deserve your most careful study. Many women have been operated upon for the relief of pain, in whom gross painful lesions existed, and yet were not relieved of their pain by the operation, because there was also present a reflex pain and tenderness, which may have been due to the presence of the growth or the inflammatory exudate, or may have been independent of them altogether. As a rule, however, a nervous or hysterical pain is acute, and is attended with marked and perhaps excessive superficial tenderness. It is in the skin and can be often increased by raising the skin into folds, and it is unduly disproportionate to the diseased organ. There are also present painful stigmata elsewhere, and other well-marked hysterical manifestations, as the globus and the anæsthetic conjunctiva and soft palate. It is needless for me to allude to the many operations which have been performed for the relief of pain, and how many querulous and mutilated women are going about from doctor to doctor, seeking relief for the many diverse and horrible symptoms which have resulted from an improper estimation and appreciation of this subtle but coy symptom, pain; suffice it to say, that these operations, which are more often performed by the unwary and the unguarded, are justly the opprobrium of our surgical art.

Endometritis and cervical catarrh is a very common affection with women, and is so easily influenced by conditions of the general health, that most women during their active menstrual life, suffer from them. They are the simple diseases of the uterus that we are so often called upon to prescribe for, and they are the slighter ailments which men who hardly know the use of a speculum, institute active treatment against. Here the various caustics are applied, from the simple nitrate of silver solutions to the fuming nitric acid. Stenosis of the cervix and os internum and even cicatricial contraction of the canal, frequently results from these topical applications, as well as acute infectious endometritis with tubal and ovarian complications. Tonics, good food, active exercise, daily movement of the bowels, sexual rest

and astringent injections are usually all that is called for. If the case, however, proves intractable and rebellious, a properly performed curettage and packing with iodoform gauze, is an infinitely less dangerous and far more effective means of treatment. However, if the cervix is wide and patulous and admits of free drainage, and there is no associated tubal or ovarian mischief, intra-uterine applications of iodine or iodine and carbolic acid, with proper precautions, may be safely employed; but if the internal os is small and contracted, much pain and colic will result, and perhaps tubal complications. It is absurd to assume, except in the most exceptional cases, that a uterus can be properly curetted, without the assistance of an anæsthetic, and that the operation can with safety be done in one's office and the patient be permitted to go home, as after an ordinary intra-uterine treatment. I am satisfied that great harm is done women every day by otherwise capable men, by underestimating the importance of this truly surgical procedure. It cannot be done well, and it will not be done thoroughly and cleanly, in a patient who is not anæsthetized. Unfortunately, this splendid operation, capable of so much good when indicated, is performed quite unnecessarily, because mechanically it is so easily done. Here the merest tyro in medicine, in order to be in the swim with his successful rival and teacher, who is an acknowledged operator of ability, curettes, because he is not capable of doing the indicated Alexander operation, or an abdominal section. He persuades his poor, guileless and trusting patient that a curettage will make a speedy cure, and thus gets the credit of doing an operation. This experience I have had time without number, and have taken out big pus tubes and ovaries in women, in whom one month before, a curettage was performed. The mechanical side of surgery is but a small matter of difficult technique and is soon studied, but to be a diagnostician, requires patience, study, practice and great skill, and without this ability to diagnose surgical conditions, surgery must be robbed of its glory and usefulness.

Cervical lacerations with their associated erosions, or what are commonly called ulcers, are often shamefully treated by capable and representative men in our profession. They are painted with tinct. iodine and various caustic preparations week in and week out, and when the patient is tired out by these frequent applications without relief, she of her own volition seeks a surgeon who

quickly performs a trachelorrhaphy and restores her to a healthy and useful life. Or through neglect to inform the poor woman of her future possibilities and dangers, these unhealthy ulcerated tears go on slowly but often surely to malignant disease. Still unmindful and careless of our terrible responsibilities, this poor, trusting and confiding patient, who once had a simple and easily cured laceration, now has a cancerous ulceration, so far advanced and with infiltration so general into the broad ligament, that an operation, even if performed, is of questionable value. This gruesome picture looks like a creation of a vivid imagination, but yet these experiences, every one of us operating gynecologists have had, and these patients have been tamponed and painted with caustics inside of the womb and outside for weeks and months. It does not seem possible that with the enlightenment of the nineteenth century, that such criminal ignorance and negligence could exist, but our operating rooms prove the truth and justice of my criticism.

Neglected perineal lacerations, with their associated rectoceles and cystoceles are treated by faradization and alum injections and all kinds of tinkering and unscientific devices, until they become such serious matters that even well-directed plastic surgery cannot restore them to normal conditions.

Ureteritis, a quite common malady in women, is also carelessly interpreted, and its symptoms are treated as if they were of intra-uterine origin, and by the same routine procedures which characterized the average gynecological outfit—speculum, sound and intra-uterine applicators.

Nervous ovaries or Charcot's ovaries is also a very common condition, and is so often misunderstood and treated as though an organic affection existed. Pain in the ovarian regions and often excruciating tenderness in the iliac fossæ, with epigastric pain, distress and dysmenorrhœa are its principal symptoms; while upon vaginal examination, the uterus is found to be freely movable and the lateral sulci not thickened or indurated, but often excessively tender. Here the fine faradic coil is a specific, and as if by magic, the pain and tenderness disappear and sometimes only one or two seances are necessary.

The uterine sound, once so frequently used for diagnostic purposes, has been replaced by the educated finger and has justly

been relegated to a very small field in the gynecological armamentarium. Yet it is a two-edged sword, and is sometimes a very valuable instrument, but should only be used with the greatest care and with the strictest antiseptic precautions. The same might be said in reference to all intra-uterine applicators and to all kinds of intra-uterine manipulations. *The galvanic electrode* has done more harm in the hands of the unskilful, than all the good which has been accomplished by its brilliant apostle, Apostoli, and his trained followers. And I regret to be compelled to say that so valuable an agent as electricity has been so easily placed in the hands of the ignorant and unscrupulous, that it is now being used by them, largely in our own city, under the guise of giving local treatments, for the purpose of criminal abortion.

The pessary, which is a troublesome and sometimes abominable device under the most favorable circumstances, is yet a very useful instrument and capable in the hands of experienced men, of bringing great comfort and relief to suffering women. Every retro-displacement, however, does not produce definite symptoms, and perhaps does only when there is present associated endometritis and catarrhal salpingitis. Nevertheless, it is too often the practice to insert this mechanical device where support is quite unnecessary, and when the symptomatology is due to some other totally remote condition. The dangers associated with the wearing of pessaries, when neglected and not properly taken care of, are too familiar to you all to need any further comment from me. You have all seen the incrustations and the ulcerations of the vaginal wall, from its careless and neglected application, and have also known of metritis, tubal and ovarian diseases to result from their prolonged use. The last decade has placed in our hands the Alexander operation, a unique and ideal surgical procedure, for the relief of symptoms producing uterine retro-displacements,—a simple, bloodless and easily performed operation, and I should say, practically without danger in careful and experienced hands. An operation which does away with the necessity of wearing a more or less dangerous, and at all times a nasty and often stinking mechanical device, and one where the future child-bearing function is not in any way endangered or interfered with. It must be performed, however, only in suitable cases—in simple, uncomplicated posterior displacements.

The cry is—and a just one, too—that there is altogether too much operating done nowadays; yet in the face of this just criticism, I am compelled to believe that most of the symptom producing definite and discoverable lesions of women are cured best and quickest by operative measures, and our work in the past has been too incomplete to get perfect results, because surgical means were not pushed far enough to cure all the conditions which were present. Recent pathology has shown us, and clinical experience has demonstrated that often with marked retroversions, there is a general enteroptosis, an associated floating kidney, and a resulting chronic appendicitis. To place the uterus in position is but one element in relieving symptoms and distress, and without fixing the kidney and perhaps removing the appendix, a cure cannot possibly follow; therefore, incomplete surgery is responsible for these many failures, and not unnecessary and uncalled for surgery.

As we said before in our paper, the great difficulties in connection with our work is the uncertainty of diagnosis and the varied and complicated and unique expressions, which so many varied and different pathological phenomena can and will produce. The nervous symptoms of retroversions and posterior displacements are much like those of floating kidney, and if both conditions exist in the same patient, operation for either one trouble seldom relieves all the symptoms present, and no one can be satisfied beforehand whether both operations will not be necessary to complete a cure.

Thus, the clinical picture of disease in its entirety must be carefully studied, and each individual element eliminated and given its proportionate consideration, and such remedial measures instituted as scientific medicine, based upon a broad and enlightened pathology, suggests.

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OOPHORECTOMY FOR GROSS FUNCTIONAL NERVOUS DISEASES OCCURRING DURING MENSTRUATION.*

D. C. BROCKMAN, M.D.

It is not my intention to question the dictum—"Never remove healthy ovaries," but rather to note an exception to this very good rule. Neither do I intend to enter the realm of speculation and try to explain why some women suffer from serious nervous trouble at the menstrual melineum and at no other time. I greatly prefer to explain the whole affair by the indefinite but very convenient term "reflex."

We all know most women show more or less nervous phenomena at this period, usually so moderate that it cannot be looked upon as pathological, but at times, we see a case in which the nervousness is greatly exaggerated—the woman is irritable and restless, or she may have gone a step farther and become so unreasonable and so nagging that life becomes a burden to the rest of the family at such times. After a while we see her becoming suspicious—despondent, frequently recalling some former indiscretion of her husband, or friend, and using it as a foundation, building imaginary crimes or offenses mountain high only to be followed later by well marked delusions—usually of persecutions. At first our patient's condition returns to the normal as soon as menstruation stops, but after months or years we see the irritation begin a few days before the flow and last afterwards that much longer, and in time we realize that she does not return to the normal, but gradually lapses into insanity in some one of its many forms. Such patients are usually in poor physical health, suffer from painful menstruation and learn to dread the period: and not infrequently have bad family history.

Again, the patient may drift into the opposite direction; instead of depression, her obliquity may all tend to emotional conditions and we have on our hands a case of menstrual hysteria, the

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monthly explosions occurring regularly and growing worse. Frequently in such cases, in spite of sedatives, moralizing, douching, etc., the convulsions assume more and more of an epileptic character and we find we have a case of hystero-epilepsy.

Another class of fussy, healthy girls, with or without a bad nervous family history, are seized by a well defined epileptic fit—possibly two or three in rapid succession—in a month or two they recur and afterwards continue more or less regularly every month, and ere long the mother or some friend observes that the fits occur always at menstruation, and the doctor has a case of menstrual epilepsy, and in spite of treatment he sees his patient gradually grows worse, and in time she has intra-menstrual attacks and soon is an ordinary epileptic, whose attacks are always worse at her periods.

These in brief form a class of cases that we claim constitutes exceptions to the rule just mentioned, for I have never seen a case of well marked insanity, hystero-epilepsy, or epilepsy occurring only at the menstrual epoch, cured by any form of treatment so long as menstruation continues, and the older doctors present have seen many such cases go down without remedy.

Women with bad family history suffering from either of these conditions may continue to grow worse after operations, but even these are frequently cured, while cases with negative family histories offer very encouraging prognosis if operated sufficiently early. Statistics here as elsewhere are misleading as there are so many factors entering into the consideration of each case that influences result. For this reason I have not attempted to compile any statistics on the subject, but from a careful survey of the literature and personal communications from many of the leading gynecologists of the country, I would say that any patient suffering from recurring attacks of insanity at menstruation or from insanity that occurred first at a period and is regularly worse at each period should have the benefit of the doubt. That every case of well marked hystero-epilepsy or epilepsy occurring only at menstruation should have a carefully done, complete tubo-ovarian ablation at the earliest possible moment. The earlier the operation is done the better will be the chance of cure, and we can assure the patient or her friends that when the trouble has

not lasted over one to one and a half years, the prospects are very good for cures—that from two to three years a considerable per cent can be cured, probably one-half, but after three years the epileptic habit has been so firmly fixed that the chances of cure are very much lessened. Even here or later, nothing is to be lost by the operation, and it should still be tried provided the fits confine themselves to the menstrual week, but unfortunately before this time in most cases, we find the attacks occurring at any time without regard to menstruation. In such cases no benefit should be expected from artificial arrest of menstruation.

With this general statement I will leave the subject, hoping the discussion will bring out many points that time will not permit me to enumerate.

I append herewith four unrecorded cases coming under this head on which I have operated during the past few years.

CASE I.—Mrs. D., aged 34, menstruated at 14 years, no children—came under my care in the spring of 1891. Family and personal history unimportant, except has always suffered greatly from dysmenorrhoea. Uterus and ovaries small but not grossly diseased,—menstruation regular but very painful and accompanied by hysterical convulsions with one or two days each month of well marked hysterical mania. At such times would destroy clothing and bedding, requiring constant watching till cessation of menstruation, when the storm would subside. She had been treated without benefit for years and after four or five months' observation with no improvement, I did a double oöphorectomy. Three days after operation she had a slight convulsion but none since, and within a year she was perfectly well, and has remained so ever since—has never menstruated, but has increased 20 pounds in weight, and eight years after operation writes me that she is perfectly well and happy, caring for an adopted boy and girl.

CASE II.—Lizzie B., aged 21, came to me in June, 1897. Family history negative—personal history good till five years ago when during her second menstrual period she had an epileptic attack. The next month she had two attacks, then none for a couple of months, when they returned at almost every period. Within a year they had increased in frequency so she had three

or four at each period. When she came under observation, was having three or four each day for two or three days—at times, eight or ten in a single day. The number of days in which she had convulsions increased so it was not infrequent for the attacks to appear three or four days before the flow and continue as long afterward, so she was liable to have attacks almost half the time. She had taken all kinds of treatment but gradually grew worse—was very despondent and said would put an end to her life rather than suffer the shame of her affliction. I looked on the case as well nigh hopeless, but felt her only remedy was in the production of an artificial menopause. To this she gladly acceded, and on September 11, 1897, I did a double salpingo-oöphorectomy, being very careful to remove the entire tube down to the uterus cornu on each side. For a month or six weeks after the operation, I gave her big doses of bromide to break up the epileptic habit. During this time she had one or two very light attacks—then, they recurred more frequently, and for five or six months she was as bad as ever and completely discouraged. Early in June, 1898, they entirely stopped and have not returned since, now almost eighteen months. She is entirely well and happy—has lost all her epileptic appearance and looks on her past trouble as a horrible nightmare. It is yet too soon to pronounce final judgment, but the case looks very hopeful.*

CASE III.—Miss W., aged 22, was sent to me by her physician during the fall of 1897 with this history: About five years ago she began having epileptic attacks during her periods. They were exactly like an uncle had with whom she had associated considerably. In a year or two she began having intra-menstrual attacks as well as at periods. During the spring and summer of 1896 she had amenorrhoea for eight months, during which time she had no attacks, but on the advent of menstruation in the fall the fits recurred and have continued ever since—occurring always at menstruation, but not infrequently during the intervals. At first I declined to operate on account of the chronicity of the case, but afterwards at the earnest solicitation of the patient I consent-

*After this paper was written, the patient reported to me that the day before, while at breakfast, she was seized with a severe attack and was unconscious for two hours, the first fit she has had for over eighteen months.

ed to try the experiment. Operated October 14, 1897. During the first three months she had a few very light attacks, then they ceased for about ten months only to recur last summer and are now occurring occasionally, but not so bad as formerly, neither in frequency nor character of fits.

If we had been operating only for the purpose of statistics, this case should have been rejected. As it is, we gave her what chance there was and feel that we did the right thing, as it could not make her condition worse. Sterility in such cases is no detriment, as an epileptic ought not to have children anyway.

CASE IV.—In February, 1897, I was asked by the attending physician to see Mrs. E. McF., aged 26. Found a pale, discouraged, nervous woman in bed where she had spent most of the past six months—had been well to a year ago, except dysmenorrhoea of a nervous type. Married four years and never pregnant. Family history bad—mother died in insane hospital and one or two other relations suffering from mental trouble. About a year ago she began suffering from severe pelvic pain and great weakness with noticeable nervous depression at each period. I found no pathology other than well marked endometritis to account for the great depression and debility. The uterus was curetted and tonics administered with assurance of speedy convalescence. She improved for a time both physically and mentally—was able to go out visiting, but in a few months was as bad as ever. Last February she was sent to the hospital by her doctors to have oöphorectomy performed. I found her anemic, discouraged, nervous, suspicious of every one, said she was losing her mind, slept badly, appetite poor, general condition bad, pelvic condition good—all organs apparently normal, except uterine tenderness. Her husband says she is violently insane for three or four days each month, at which time she talks of suicide—is sleepless entire time unless heavily drugged. After a few days she partly regains her mind, but at all times is suspicious of all food and medicine, claims to have important papers in her care which some one is trying to get possession of. She insisted that if her periods were not stopped she would soon become insane.

A few days after coming into the hospital menstruation appeared, and with it a violent mania, during which she jumped

through a window and was caught by her clothing and pulled back just in time to save her from a fall from the third story of a building. She was now removed to a place of safety and watched closely for four days when the storm subsided and she was as before.

March 13th I removed apparently healthy tubes and ovaries and suspended the uterus. The third day after the operation she again jumps through the window and was again pulled back by her attendants. Restraining straps were now put on and she would not allow them to be removed while in the hospital. Notwithstanding her active exercise no harm was done, and she had a perfectly normal physical convalescence. Her mind gradually improved so that she could be removed from the hospital in three weeks after the operation to a friend's home, but was despondent and doubtful as to the results until after she had passed the time for menstrual period without any evidence of their recurrence, when she improved more rapidly. Six weeks after the operation she was cheerful and happy, confident that she would soon be well. In May she returned home and within a month began doing light housework, a thing she had not done for three years.

At present, ten months after operation, she is cheerful and happy, eats and sleeps well. At times she gets discouraged for a day or two but soon regains her courage, is able to do her housework and says will soon be as strong and well as ever.

The results in these four cases are not perfect and three of them have been operated within three years, so that it is too early to say yet what the ultimate results will be, but I am certain I could not have obtained as much improvement by any other means. The first case is cured. No. 3 not greatly improved. No. 2 much improved, and am in hopes entirely recovered. No. 4 greatly improved with good grounds for hopes of entire recovery.

Our cousins, the Alienists and Neurologists, look upon these operation very skeptically, say there is no such thing as menstrual epilepsy, that if there is, it is never cured by surgery, etc., but careful observers and able diagnosticians have repeatedly pronounced these cases epilepsy, and perfect, permanent cures have been obtained by removing the periodically recurring molineum that excites these explosions.

The same may be said of insanity of this character. Enough cases have been cured to overthrow all the theoretical arguments that can be urged against the procedure. Facts are stronger than theory.

It is only by patient, painstaking work along this line with honest reports made three or four years after the operations that we will learn on what cases to operate and what not, but one thing is certain, no more pitiable cases come to our rooms than women suffering from the gross functional nervous diseases, and none more deserving of more careful, scientific, conscientious study than they, and the doctor will not have lived in vain who succeeds in curing even a few of these poor unfortunates.

Ottumwa, Iowa.

A CASE OF CYSTIC TERATOMA COMPLICATED WITH HEMORRHAGE.*

EDW. HORNIBROOK, M.D.

I PRESENT this case for the consideration of the society, not because of anything in its clinical history, but on account of the unusual pathological conditions.

Mrs. P., aged 22; married three years; one child, 18 months old, which she is nursing. Child strong and well developed. Mother always enjoyed good health; small in stature, fair complexion, blue eyes. Has never been conscious of swelling or discomfort in the pelvic or lower abdominal region. Was taken with severe pain while straining at stool July 18, 1899. Fainted and was carried into the house.

Her physician found her almost pulseless, skin cold and clammy, knees drawn up—suffering intense agony, which was only slightly relieved by hypodermic injections of morphine. Small tumor discovered in right inguinal region.

Another physician called in consultation on morning of the 19th. He found abdomen enlarged, tympanitic above umbilicus, dull on percussion over lower part of abdomen, exquisitely tender,

*Read at the meeting of the Western Surgical and Gynecological Association at Des Moines, Iowa, December 27 and 28, 1899.

constant vomiting, pulse 150, temperature 103° —all the symptoms of general peritonitis, with a large rapidly increasing tumor in the abdomen.

I saw the case on the 20th, about two o'clock A.M., and diagnosed a haematoma with general peritonitis. I commenced the operation at eight o'clock the same morning.

The parietal peritoneum was greatly congested, dark in color and friable. A large quantity of dark fluid blood was found in the cavity and some large clots surrounding the tumor—which was large and filled the abdomen as high as the umbilicus.

The pedicle was short and thick and appeared to be attached to the iliac fasciae—the iliac artery being distinctly felt pulsating beneath the growth, which was semi-solid and filled with blood. The abdominal incision not being large enough for the delivery of the growth *en masse*, I opened the tumor and turned out the clots—being careful that none of the contents should escape into the peritoneal cavity. I ligated the pedicle in three sections, placed an additional catgut ligature on the end of the largest artery and sewed the peritoneum with catgut over the end of the stump. I then thoroughly irrigated the peritoneal cavity with sterile salt solution at a temperature of 105° , and continued this until the water came away clear and the cavity was free from clots. No sponges were used. I allowed a large quantity—probably two quarts—of the solution to remain in the abdomen.

Patient rallied quickly, indeed, the pulse improved and the color of the lips changed as soon as the hot irrigation was commenced. She suffered no pain and did not vomit after the operation and appeared comfortable.

I gave a drachm of saturated solution of sulphate of magnesia as soon as she recovered from the anaesthetic, and continued to do so every hour until I saw death approaching. She died from general peritonitis forty-four hours after the operation.

Macroscopic examination showed that the outer or larger sack contained some blood clots, a smaller tumor was found inside the large one in which some small hard bones could be felt.

I append the notes of the pathologist, Dr. Eli Grimes, to whose painstaking investigation and general courtesy I am much indebted. I also pass round a photograph of the sketch which he

made and which illustrates the relation of the tumors and the parts excised.

The left ovary and tubes were normal in size and position; the uterus was not enlarged. The right Fallopian tube, or remain of it, was as thick as a lead pencil and extended not more than half an inch from the uterine cornu. Its end was smooth and apparently covered with peritoneum. No trace of the right ovary could be found.

The case is, I believe, unique in medical literature. I find reports of several cases where the stump of the tube only was found, but in them there was always a history of an extra-uterine pregnancy or a salpingitis; but in this case there is no history of either—in fact no history of disability of ill health—prior to the commencement of the last illness.

Dr. Eli Grimes reports: "A cystic tumor, with thick outer wall, containing within a smaller tumor.

The covering of outer wall partly peritoneum, containing, in a fold, a portion of the Fallopian tube, with fimbriated end.

No ovarian tissue could be discovered. The outer wall contained striated muscle and small well developed bones, the type of which could not be determined. This wall was sacculated and contained blood clots.

The inner wall, that is, the covering of the small second tumor, was found to be dermal tissue with glands and hair. Within this tissue were many pockets or loculi containing either sebaceous matter or blood, the sebaceous matter predominating. In none of the sacules were the blood and sebaceous matter mixed, but separated by distinct walls. Some of the blood was undergoing organization.

No ovarian tissue could be found.

No placental structure could be made out.

The tissues were too well developed to be foetal.

Diagnosis—Cystic Teratoma of the Ovary complicated with Hemorrhage."

We might say of the growth, with Pope:

"The things, we know, are neither rich nor rare.

But wonder how the devil they got there."

That it started in the Fallopian tube may, I think, be fairly inferred from the fact that the tube was severed close to the uterus and from the farther fact that part of the tube with its fimbriated end was found in the outer covering of the growth.

That it was not an extra-uterine pregnancy is shown both by the history of the case and the statement of the pathologist "that the tissues were too well developed to be foetal."

Recent scientific research by Prof. Jacques Loeb of the University of California might possibly serve to explain the phenomena here presented. His experiments were made during last summer and autumn, with sea urchins, the male and female of which are separate animals.

He subjected the unfertilized eggs to a solution of sodium and magnesium and within two hours they hatched, producing "blastulae," or the first "larvae." Placed in normal sea water, these developed into gastrulae and then into plutei, the latter bearing the same relation to a sea urchin as a tadpole to a frog.

Prof. Norman of Texas had previously shown that the eggs of certain marine animals, when unfertilized, had a tendency to develop when sodium or magnesium were added to the water in which they were.

Prof. Loeb's researches convinced him that only the presence of calcium and potassium in the sea water prevented the development of all unfertilized eggs, and that all that the milt deposited by the male had to do was to overcome the effect of these chemicals.

If the researches of these scientists are confirmed by further observation, we will be forced to conclude that "an immaculate conception may be the result of unusual but natural causes," and that even the human female may be endowed with the potentiality of reproducing the species, if certain chemical substances which have the power when present, to restrain the cells from dividing and developing, are either neutralized or absent.

In this case it may have been possible that the chemicals being absent or neutralized, the cells divided and developed in the Fallopian tube, and by their growth, ruptured and amputated that tube and left an abnormal growth which anchored itself to the pelvic walls and grew slowly without influencing the patient's

health, until the straining at stool ruptured a blood vessel and caused a rapidly fatal termination.

This, I know is speculation, and yet it is speculation with a basis of ascertained facts, and is the only speculation which, in my opinion, offers a rational explanation of the growth of dermoid cysts and teratoma.

Some of you may think (and I am inclined to think myself) that it is amenable to Byron's criticism of science:

"Knowledge is not happiness, and science
But an exchange of ignorance for that
Which is another kind of ignorance."

But I leave it with you for what it may be worth in the belief that if it serves no other purpose it will stimulate thought.

Cherokee, Iowa.

TOLERANCE OF THE GRAVID UTERUS WITH A CASE.*

H. C. YOUNG, M.D., D.D.S.

THERE is a great difference in the susceptibility of the muscular tissue of the uterus to become active, whether the uterus contains the embryo or not; often the lightest cause will cause contractions and bring on a uterine colic in one case or an abortion if pregnant.

We have the abortion following shock, a slight injury, as the mother falling down with or without violence to the uterine walls. On the other hand we may have a uterus that will stand any or all of these causes without the least effort at contraction, or if they do occur, they subside without any material damage to the contents of the uterus.

We have on record cases where all kinds of operations have been performed on all parts of the body, such as removing tumors from the abdominal cavity, repairing lacerated perineum, removal of the mammary glands, amputation, trephining, etc., without the least disturbance of the uterine contents, or as the records show,

*Read by title at the meeting of the Western Surgical and Gynecological Association at Des Moines, Iowa, December 27 and 28, 1899.

we may have the delivery of one of a pair of twins that have been blighted, while the other is carried to term with a living child.

The case that I wish to describe to you is one that was of great interest to me, as it gave me a great deal of trouble.

I was called to see Mrs. E. last August. She is 35 years old, 5 feet and 7 inches tall and weighed 150. Had missed her courses five weeks before and was the mother of five children. For two or three weeks she had complained of loss of memory at times and the morning before I saw her she had a convulsion and was flighty when I arrived. I examined her and found her fairly well nourished, and without any albumen or sugar in the urine, but persistent vomiting. I painted the cervix with tincture of iodine, and used a paliative treatment without any benefit. The next day I called to see her and dilated the cervix, with some relief, but without any uterine pains. About one week later, as she was not doing as I thought she ought to, I secured counsel, and we decided to empty the uterus to save the life of the mother. As the cervix was very rigid we introduced a sea tangle tent and packed the vagina with gauze. This we left in place 24 hours, and as this gave some relief we decided to wait. In a few days the symptoms returned and we introduced a linen bougie and packed the vagina. This we left in place 48 hours. As it did not cause any pains it was removed, and after an antiseptic douche another one was introduced which caused some pains and was left in place 60 hours. As the woman was comparatively easy after this we waited to give nature a chance to do what she would. After a few days of relief the delirium returned and we introduced the third bougie, which caused some contractions. The cervix having become soft by this time, I introduced a Barnes Dilator, and with the aid of this instrument and my fingers I dilated the cervix and delivered the fetus some five weeks after I was first called. After cleaning her up I placed her in bed and in due time she made a good recovery.

There is a question in this case whether I should have gone on and emptied the uterus when I was first called to see this case. But at that time there was some hope of saving the life of the child as well as the mother. If we could have known the final

outcome at that time we should have emptied the uterus the first time I was called.

The toleration of the pregnant uterus, as seen in this case and several others, has been a great surprise to me.

Bloomfield, Iowa.

EXPLORATION OF THE ABDOMEN AS AN ADJUNCT TO EVERY CELIOTOMY.*

HOWARD A. KELLY, M.D.

I HAD occasion on several instances some sixteen years ago to make a post mortem examination and to remove various viscera which I was desirous of inspecting, through the vaginal vault in women and the perineum and rectum in men. These experiences showed me that it is easy to reach all the viscera through an incision as far as possible from the centre of the abdomen, large enough to admit the forearm, and suggested the propriety or rather the necessity of making a somewhat analogous investigation of all the abdominal organs in the living subject every time the abdomen is opened.

The routine examination of the abdominal and pelvic viscera in all celiotomies where it does not endanger the life of the patient, will commend itself to a surgeon for a number of excellent reasons, some of which are the following:

First, as abdominal diseases are commonest in middle life, the period when most of our celiotomies are performed, it is practically certain that the coincidence of two or more entirely independent diseases will be discovered in some instances by means of this examination.

Again, there is a constant association between certain abdominal affections and affections elsewhere in the form of a mutual interdependence, either from the propagation of disease as in the case of cancer, sarcoma and tuberculosis, or mechanically, where the effects of pressure are manifested near to, or at a distance

*Original abstract of paper read at the meeting of the Southern Surgical and Gynecological Association, December 5-7, 1899. A more extended consideration of this subject appears in the Medical News, December 16, 1899.

from, the seat of disease, as in the case of pelvic tumors or inflammation obstructing the vascular, the urinary or the alimentary channels. These secondary conditions often in their initial and curable stages, may be brought to light by the method of investigation here advocated.

Moreover, such an examination if negative gives both operator and patient a much more comfortable assurance that the convalescence will continue without interruption, as well as the satisfaction of realizing that there is no visceral affection in progress which may in the near future tend to shorten life or to impair health.

The following diseases are most likely to be found in such a routine examination: appendicitis, hernia, either inguinal or umbilical, hydronephrosis, disease of the omentum, pyloric cancer, movable kidney, enteroptosis, cancer of the liver, perihepatitis, gall stones.

In making the exploration extreme care must be taken to maintain asepsis by thoroughly sterilizing the arm, better still by wearing a rubber glove with a long sleeve reaching as far as the elbow. If the area in the immediate neighborhood of the incision is so septic as to require the use of drainage, the operator had best forego the more extended examination. The best position of the patient for the examination is either lying flat on the table or with the pelvis slightly elevated. The structures are examined in an order which must vary with the location of the incision. When the abdominal opening is made low down over the middle of the pelvis I commonly follow some such routine as this: after carefully noting the condition of each pelvic viscus, uterus, tubes and ovaries, bladder and rectum, I look at the inguinal and umbilical ring, and if there exists a hernia I proceed to sew it up at once from the inside of the abdomen. The next point of importance requiring examination is the vermiform appendix.* This should be removed if it shows any traces of previous inflammation. Then follows the inspection of the ureters, of great importance in gynecological operations. Every surgeon should be thoroughly familiar with the ureteral landmarks. The position of the transverse colon and the stomach are noted on account of the frequency of enteroptosis.

*The method I follow in reaching the various organs is detailed in loc. cit.

The operator now introduces his forearm and palpates both kidneys, noting their presence, size, form and mobility. A stone in the renal pelvis is readily felt. After the kidney the liver is palpated, its apparent size, the regularity of its surface, any adhesions which when present indicate perihepatitis, being noted; and most important the gall bladder is explored. I next put my index finger in the foramen of Winslow and trace the common duct down for several centimetres feeling for stone.

The spleen, the pancreas, retroperitoneal lymph glands, and finally the abdominal portion of the aorta are palpated in order.

There are in general three classes of cases to which this extended examination may be applied:

Firstly, those in which there has been no reason to anticipate disease of any other organ and the examination is made simply as a routine procedure whenever it adds nothing to the gravity of the situation.

Secondly, those cases which, on opening the abdomen, contrary to expectation no disease is found near at hand. I recall a case† of this sort in which I made an incision over the appendix and finding no appendicitis, enlarged the opening and discovered a gall stone within a ruptured gall bladder, also an instance in which gall stones were believed to be present, but on finding the diagnosis at fault I introduced my arm through the enlarged incision and came upon a large hematoma of the ovary.

Thirdly, the group of cases in which there exists a definite percentage of chances that the disease discovered at the time of operation is complicated by the affection of some other organ neighboring or remote.

Baltimore, Md.

HOW TO PREVENT AND HOW TO TREAT UNUNITED FRACTURES.*

A. C. BERNAYS, M.D.

"My experience is based upon twenty cases of ununited fracture of the femur, twelve of the humerus, eight of the patella,

For description of cases see loc. cit.

*Original abstract of paper delivered at Des Moines, Iowa, at the 9th meeting of the Western Surgical and Gynecological Society, December 27, 1899.

eleven of the tibia, six of the ulna, one each of the radius, the metacarpal bone of the index finger, the clavicle and two of the inferior maxilla. These were treated in a surgical practice of 23 years."

The vast majority of all cases is due to a misunderstanding and a consequently improper or rather insufficient method of treatment. The impropriety and the insufficiency lie in the fact that the methods which were applied, did not give the complete rest required to get union by long consolidation.

The greatest stress must be laid upon this point, and it must never be forgotten that repair takes place in all diseases or injuries most quickly and satisfactorily under the influence of rest. When complete rest can be given to the injured tissues, repair takes place in a normal way without fever, or constitutional or local disturbances. Hilton, as long ago as in 1867, proved in a most careful study that under the influence of rest there is absence of pain. His little monograph "On Rest and Pain" is one of the classics in English medical literature.

"I will go a step farther and will say that the reason why the aseptic and antiseptic methods of wound treatment are better than all previous or older methods, is because they keep away from wounds the most mischievous agents of unrest that can possibly affect wounds."

To translate the phrase, "to give rest," into practical surgery, must always be the chief aim of the art of surgery. The surgeon who practices his art in such a manner, as to secure the most perfect rest possible under the circumstances, for the diseased or injured parts which he treats, will be the most successful surgeon.

In the discussion, Dr. Bernays said, that he believed the most valuable parts of his paper, and that which would attract most attention was the advancing of this observation. He went on to show that the entrance of bacteria or their toxic products into wounds were responsible for that commonest form of unrest, which is known as wound infection, inflammation and suppuration. In the presence of these we have abnormal, painful and slow-healing, because the tissues are not at rest. They are irritated and are kept at work incessantly eliminating the poisonous irritating substances. In their absence, we have normal, painless

and quick healing. This is the real reason why the antiseptic or rather the aseptic method of wound-treatment is the best. It is best because it gives most rest.

All cases of ununited fracture which are due to insufficient methods of treatment are curable; they can be cured by proper methods. The latter must insure the most complete rest and, as a matter of course, those methods which fail to give the amount of rest necessary to produce or permit of repair must be given up. All cases of non-union which are not cured by proper approximation and immobilization are incurable and are due to some unknown or to some of the well-known constitutional vices, such as the different forms of malnutrition, cachexia and debility. It is clear that approximation and apposition, followed by proper fixation and immobilization, are the methods which we employ to achieve rest in simple fractures. The same principles govern the treatment of compound fractures, but in addition we make use of such methods as will insure asepsis by means of antiseptics alone, or by means of antiseptics and drainage. An aseptic compound fracture can be treated like a simple fracture, but one must be very sure that there is no infection of the wound before closing it up without providing for drainage. The cases in which this is permissible have been very rare in my experience.

The following were the theses formulated by the doctor in closing his paper:

1. The antiseptic and aseptic methods of wound-treatment are better than all previous methods, because they help to insure physiological rest to injured tissues by preventing the condition of unrest known as infection in medical literature.

2. Non-union of a simple fracture is always due to a constitutional vice if it follows after proper and long-continued approximation and fixation.

- (a) Non-union can, therefore, always be prevented by proper approximation and immobilization in the absence of a constitutional vice.

- (b) It follows then, that an unknown or a known form of constitutional vice must exist in cases where non-union results after proper approximation and immobilization of a fracture.

- (c) It is furthermore clear and must be maintained by all sur-

geons, that if proper approximation and immobilization is practiced and continued for a long time, the attending surgeon cannot be held responsible for a resulting non-union. The non-union must have been due to an existing constitutional vice which we cannot always recognize.

3. If, after a certain length of time the dressing, cast, splint, or apparatus is removed and non-union is found, there are only three conditions possible:

(a) The dressing, cast, splint, or apparatus failed to properly approximate and fix.

(b) The time of treatment was too short.

(c) There exists a constitutional vice.

The first of these three possibilities is by far the most common and is the cause, which, when recognized, can be easily removed.

4. After all of the known methods of treatment of ununited fractures, be they the simple bloodless friction of the ends or any of the bloody operations, such as drilling, nailing, wiring, sawing or clamping, approximation and immobilization must be maintained in order that bony union or consolidation may take place.

5. The so-called ambulatory treatment of fractures of the lower extremity while often giving good results, will be followed by delayed union or non-union more often than the treatment in bed, because of failure to secure proper rest.

6. In old cases of non-union of simple fractures it is a good plan to save all of the chips or sawings of the bone which are removed, when preparing and shaping the ends, and to replace them between and around the fragments or ends of the bone before removing the Esmarch bandage. After the tourniquet is removed the whole wound and the spaces between the fragments and chips will be filled with blood, and if one has been aseptic the best plan will be to close the wound entirely and put to rest with a view of leaving the dressing untouched for a period of from seven to ten weeks.

7. In cases of fracture of the long bones, I believe that the use of an anæsthetic for the purpose of getting perfect apposition and fixation is indicated.

8. The old rule that the joint above and below the fracture

must be included in the immobilizing apparatus, cast, or splint, can never be safely broken. It is a good rule and should always be observed.

St. Louis.

NOTE.—I have seen a few cases of non-union in children and young people, in which the well-known forms of constitutional defects or vices could apparently be excluded, and in which non-union was evidently due to some germ or pathological condition of which we have no knowledge. There was simply no reparative action around the ends of the broken bone at any time after the accident, in spite of the most persistent treatment. During periods of time extending over several years, all rational methods of treatment proved unavailing and there never was an improvement of the flail-joints.

OBSTETRICAL PROPHYLAXIS IN GYNECOLOGY.*

JAMES CLIFTON EDGAR, M.D.

THE author affirms that a large proportion of cases that apply to the gynecologist for relief of crippled pelvic organs owe their invalid condition to mismanagement or avoidable accidents of the pregnant, parturient, and lying-in states; and that this large class of invalids, that owe their condition to careless and unclean obstetrics, can be greatly reduced, if not practically done away with, the remedy to be found not in the preaching, but in the practical teaching of clean and conservative obstetrics.

That a careful attention to prophylaxis on the part of the obstetrician is of value not only in anticipating and warding-off many of the dangers of pregnancy, labor, and the puerperium, but also in preventing many subsequent disabilities of a gynecological nature, admits of no question. Nowhere more than here does the old maxim, that prevention is better than cure, find truer application.

The subject was under three heads:

- A. As it relates to pregnancy.
- B. As it relates to labor.
- C. As it relates to the puerperium.

*Abstract of paper read before the Medical Society of the State of New York, at its ninety-fourth annual meeting, held at Albany, January 30, 1900.

A. *Pregnancy*.—There is relatively little that we can do during pregnancy which will have a direct influence in the prevention of subsequent uterine and pelvic trouble. Attention to the general health, however, e.g. the prevention of constipation, the proper treatment of co-existing anæmia, moderate exercise in the open air, suitable clothing, especially the avoidance of constriction about the waist, in a word, a good hygiene of pregnancy is undoubtedly of prophylactic importance especially in two ways: 1st, by providing the patient with healthy blood, one of the best germicides, and thus perhaps forestalling or minimizing the effects of septic infection; 2nd, by increasing the muscular and general nutrition, factors of undoubted importance in the prevention of subsequent subinvolution of the uterus and adnexæ.

Every pregnant woman should be impressed with the importance of placing herself under the care of the physician who is to attend her as soon as she shall become aware of her condition.

It would be wise to give such a patient early in gestation, some simple directions, either verbal or printed, embracing advice regarding exercise, clothing, diet, care of the bowels, skin, kidneys, breasts, teeth, and the danger signals of approaching complications.

There can be little doubt that not only patients, but their advisers, are too prone to consider this as a period of invalidism, and to forget that it is a physiological process. One of the important results of this view is the neglect of muscular exercise, especially in the higher walks of life where the desire to escape observation and the fears inspired by false views lead to the neglect of even the little exercise, e.g., walking, to which the patient is accustomed, and the consequent weakening of the whole muscular system. Now just the opposite should be the case. The strain imposed upon the muscular system by the requirements of labor is a severe one, and should be forestalled by the cultivation, as far as possible, of muscular strength.

In the effort, however, to secure a proper hygiene of pregnancy, we should not forget the danger of over-exertion; and this brings us to the consideration of one point which we believe to be of especial and direct prophylactic importance. We refer to the

avoidance of everything which increases intra-pelvic pressure, and resulting pelvic congestion.

An improper or insufficient diet during pregnancy can hardly be considered as a direct factor in the production of uterine disease. Acting, however, to produce a lowered vitality, it is doubtless as indirect factor in the production of subinvolution and the evils which follow. There has as yet been little evidence advanced to show that in cases of normal pregnancy any special kind of diet is of importance, nor is it antecedently probable. A mixed diet, sufficient in quantity to meet the often increased appetite of the patient, is probably the best.

Important modifications of diet are of course imperative in threatened albuminuria, vomiting of pregnancy, and other morbid conditions, but these need not be considered here.

The studies of Prochownik and others with reference to the prevention of dystocia by a restricted diet, and those of Schenck with regard to the determination of sex by an analogous method are chiefly important from the standpoint of pure obstetrics.

B. *Labor*.—While in the management of pregnancy we can, as a rule, act only indirectly as far as gynecological prophylaxis is concerned, we can in the management of labor do a great deal which is of positive and immeasurable benefit to the patient in preventing subsequent, serious and perhaps life-long disability. And we may subserve brevity and clearness by dividing this part of our subject into three parts, as follows:

1st. Limiting the duration of labor.

2nd. The prompt surgical treatment of traumatism, the result of labor.

3rd. And most important of all, the observance of strict asepsis.

1st. That labor prolonged beyond the limits of safety is of itself the cause of subsequent local trouble, is of course well known. This statement is applicable to all kinds of abnormal labor, but perhaps finds its best application in cases in which local sloughing of the material parts is caused by prolonged pressure of the fœtal head. Vesico-vaginal fistula at once suggests itself in this connection.

And this brings us to the fact that maternal lesions may be the result not only of the premature or unskilful use of the forceps, but also of undue delay in their use. To lay down exact rules, as

some have attempted to do, as to the time which should be allowed to elapse before the application of the forceps without reference to the individual case, is, of course, wrong. Many other circumstances must guide us here. But it is safe to say that, when with good uterine contractions the head remains stationary, the danger of injury to the maternal soft parts becomes an important factor. A similar danger also arises from too prolonged efforts to retard the passage of the head through the vaginal outlet in order to prevent laceration of the perineum. We refer here not only to the dangers arising from prolonged pressure, but also to permanent relaxation of the muscular structures of the pelvic floor with resulting disability.

2nd. It should be the aim of the obstetrician to leave his patient in at least as good condition as that in which he finds her, and no man should attempt the care of the lying-in patient who does not understand not only the ultimate results of the more common lesions of the genital tract, which may accompany the parturient act, but also the methods of their repair.

Not long ago when trachelorrhaphy was a very common operation and when the importance of cervical lacerations with reference not only to the etiology of cancer, but of various lesser troubles, the immediate suture of cervical lacerations was advocated in many quarters. With the advent of more correct views, however, the majority of obstetricians do not favor the immediate repair of cervical lacerations except when required by severe hemorrhage. The danger of sepsis is by no means inconsiderable.

The importance of the immediate repair of all lacerations which endanger the muscular structures of the *pelvic floor* is now generally recognized.

It should not be forgotten that an external inspection of the parts is by no means sufficient, since a severe laceration involving the levator ani may exist without any external sign.

A word of caution is necessary, however, with regard to the details of the operation. Too often the operator simply restores the parts to their former appearance without uniting the torn muscular structures. Nor should the danger of sepsis be forgotten, especially when operating high up in the vagina. There is always a slight risk of infection, and many a case of puerperal sepsis has had its origin in a perineorrhaphy done without careful precautions of antisepsis.

Most important of all in connection with prophylaxis during labor is rigid attention to *asepsis* and *antisepsis*. The importance of septic infection as a factor in the production of uterine and pelvic disease is too evident to need comment. One fact, however, we desire to emphasize, viz., that what is called antiseptic midwifery, while it has enormously decreased the mortality from puerperal infection, has by no means had a corresponding effect upon the morbidity.

We are too prone to consider only mortality in our results, and to pass over entirely the question of morbidity. Even today the influences upon morbidity, the ultimate consequences of a mild puerperal process, are too apt to pass unrecognized by the obstetrician, and the case passes into the hands of the gynecologist for the cure of chronic uterine and peri-uterine inflammation, which had its origin in an unnecessary if not careless vaginal examination. We hear much of a lowered mortality, and little or nothing of a reduced morbidity.

C. *The Puerperium*.—Here, while we cannot be so aggressive in our methods since the period of action has passed, there is yet much that may be accomplished in the way of prophylaxis. Perhaps as much in the way of combatting old and foolish customs as in the introduction of new ones of our own.

The all important question at this time is:

How best can we secure involution in the puerperal state?

It is in the puerperium that we should rivet our attention upon the prevention of subinvolution, and especially in cases following the premature interruption of pregnancy.

Were closer attention given to this subject in practice the sequellæ of subinvolution, metritis, endometritis, retro-displacements and prolapsus would be less frequently met with.

In addition to the familiar means for the prevention of involution, which we cannot do more than hint at here, a routine physical examination of every woman toward the close of the puerperium, and before she passes out of the observation of the obstetrician, is of the greatest value in the detection of slight departures from the normal process of involution, and in drawing our attention to them when amenable to treatment.

Were some simple, orderly method of history keeping of obstetric cases in private practice adhered to, this examination in

the puerperium would readily become a routine, and give us valuable rewards for subsequent reference.

In the puerperium we find two principal factors predisposing to uterine displacement. Increased weight of the organ together with relaxation of its supports. It is not strange then, that the occurrence of displacements at this period should be brought about by causes which at other times would be quite insufficient.

Among these we may mention the improper use of the abdominal binder. We believe that the binder, when properly applied, conduces to the patient's comfort, especially by permitting her to assume the lateral position, diminishes the danger from syncope from decreased intra-abdominal pressure, and promotes involution of the abdominal muscles.

We would, however, protest against its being applied too tightly, believing that such an application, especially when combined with a prolonged dorsal decubitus, tends to cause posterior displacements of the uterus.

The practice of keeping the patient upon the back for a long period also favors posterior displacement, and we believe that after the first day the lateral position should be advised. This position also favors asepsis by promoting the discharge of lochia from the vagina.

For several years we have taught our nurses and students to insist upon a "rotation of the patient" during the whole of the puerperium, meaning by this that the patient's position in bed during a given twenty-four hours shall be equally divided between the dorsal, abdominal, and right and left lateral postures.

Many patients insist that they cannot sleep upon their abdomens, or remain for any time in this posture. We have found, however, that with a little practice the habit can be readily acquired. We have counseled the practice of the abdominal posture in early pregnancy in anticipation of the lying-in state and its requirements.

Observation reveals many women who are unable to completely empty the bladder or bowel by the use of the bed-pan, and resulting pelvic congestion and pressure are thus favored. The difficulty could have been avoided had the patient been trained in the use of the bed-pan during pregnancy.

Another remedy for incomplete bladder or bowel evacuation and a method which at the same time favors uterine draining, is

in permitting our patients to either sit up upon the vessel placed in the bed, or upon a commode at the side of the bed, early in the puerperium for bladder or bowel evacuation, and to assist in uterine drainage.

This has, in the past, been recommended by some in selected cases, and by others in all.

In our observation during the past ten years of many thousands of cases confined in the tenements, we have never seen dangerous symptoms result from this practice, and yet the majority within six or eight hours of their confinement either sat up upon a vessel in bed or at the bedside to pass urine.

The importance both to mother and child of the proper performance of the function of *lactation* is universally admitted. We would not, however, as bearing especially upon the subject in hand, the influence of nursing in favoring uterine contraction and in volution, and thus aiding in the prevention of uterine disease.

Getting up too soon and especially too early resumption of household duties are without doubt important factors in the production of displacements and even prolapse, and particularly when delivery has been attended by some lesion of the pelvic floor, which has been neglected, or improperly or unskilfully treated.

We would emphasize the fact, that patients should even after leaving the bed, spend a part of each day in the recumbent posture, and that the occurrence of a backache should be regarded as a warning against standing or walking, and especially against any kind of work.

The importance of a routine examination of the pelvic contents and tonicity or sagging of the pelvic floor (levator ani muscle) at the completion of the puerperium cannot be overestimated. If this be made a routine, many minor derangements could be at this time corrected, which if allowed to remain untreated would by time become aggravated.

Some ten years ago my attention was drawn to cases of undue pelvic floor projection (sagging of the levator ani muscle) and to patients with weak abdominal muscles, especially in women seen in private practice.

At that time, at the suggestion of one of my first confinement patients, I first began the use of the pelvic binder, to sustain the

pelvic floor and the lower portion of the anterior abdominal wall, in selected cases, for three months following puerperium. The results obtained were so satisfactory that I soon used the pelvic binder in all cases.

The binder is made of muslin, linen, mull, Canton flannel or two thicknesses of heavy gauze, and is made to encircle the pelvis and lower abdomen at a level with the crests of the ilia, and to support the pelvic floor by means of a strap made of the same material as the binder, which passes between the thighs, and tightly drawn is pinned either in front or behind, as is more convenient.

Ordinary corset lacing down the front or back secures a snug fitting of the binder.

The pelvic binder when applied, laced, and the perineal band secured, is not unlike in appearance and shape the ordinary swimming trunks worn by bathers.

I am accustomed to have half a dozen or a dozen pelvic binders made and fitted in the latter part of the puerperium, and to replace with them the ordinary abdominal binder as soon as the lochia has practically ceased in the third week of the puerperium, and when the patient first commences to sit up in bed, or changes from the bed to lounge, and to continue its use for three months from this time.

The results obtained by the use of this pelvic binder have been more than satisfactory. Its benefits have been readily appreciated by my patients themselves, some having used it after as many as three confinements.

1. It prevents or corrects undue sagging of the pelvic floor. This is especially noticeable in cases where, during labor, the levator ani muscle has been subjected to severe or prolonged pressure, as in disproportion between the head and the outlet, in breech presentations, in forceps or craniotomy cases, or prolonged labor near the termination of the second stage from any cause, in severe lacerations with bad union, and in cases where the levator ani is torn and the perineum remains intact.

2. It assists in the ultimate union of severe lacerations of the pelvic floor which have been repaired.

3. It preserves the woman's figure after confinement by its support of the anterior abdominal wall, and of the pelvic floor.

4. It lessens the dangers of displacements of the pelvic contents.

5. It tends to prevent pelvic congestion.

6. It usually adds to the comfort of the woman, giving her a feeling of security and well-being and allowing her to obtain needed exercise earlier and more freely than otherwise would be the case.

Unless pre-existing pelvic disease be present, with the use of this pelvic support we rarely see the danger signals of pelvic congestion, namely, backache and symptoms of irritable bladder.

What place have drugs and various non-medicinal methods of treatment of the puerperium in the prevention of subinvolution and consequent gynecological conditions?

During the past ten years we have experimented with various methods of treatment of the puerperium with the object in view of determining, if possible, the best management for the prevention of subinvolution and subsequent gynecological conditions.

Observations were made as follows:

I.—No medication or special treatment during the puerperium. Primiparae, 22 cases; multiparae, 21 cases; total, 43 cases.

II.—Strychnia during the puerperium: Primiparae, 48 cases; multiparae, 55 cases; total, 103 cases.

III.—Strychnia during last two or three weeks of pregnancy and during puerperium: Multiparae, 30 cases.

IV.—Ergot (2 drachm, Fl. Ext.) after completion of third stage only: Primiparae, 18 cases; multiparae, 13 cases; total, 31 cases.

V.—Quinine (gr. 2, t.i.d.) during the puerperium: Primiparae, 22 cases; multiparae, 23 cases; total, 45 cases.

VI.—Posture in bed: (1) mostly dorsal, and (2) posture equally divided between dorsal, right and left lateral, and abdominal (rotation of the patient).

VII.—Evacuation of the bladder and rectum by means of catheter and bed-pan, and early use of vessel or commode.

VIII.—Vaginal douches: (1) none at all, (2) one after third stage, and (3) daily douches during the puerperium.

We are not prepared this time to give the full results of our observations, other than to call attention to the decidedly favorable influence of (1) strychnia, administered both in the latter part of pregnancy and during the puerperium; (2) the marked advantages of the rotation of the patient as regards her posture

during the lying-in period; and (3) the advantages of an early use of the vessel in bed or the commode at the side of the bed, in favoring uterine drainage, hastening involution, and in the avoidance of pelvic congestion.

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NOTES ON THE X-RAY: ITS USEFULNESS AND MISTAKES.*

J. RUDIS-JICINSKY, A.M., M.D.

THERE seems to be a plethora of new institutions which go before the public under the "scientific cloak" and which seek to uphold their interests in this way. Months ago there was in a certain town a quack, who advertised himself with a complete X-Ray apparatus, pretending with the help of his second-hand machine to diagnose and certainly heal all acute and chronic diseases. What a shame! The cause of real science is not a selfish one. It extends the hand of welcome to all new comers, who can, and dare to point to a clean bill of truth and proof of the claim that they make. It, however, cannot tolerate any exaggerations, which have plans wholly at variance with common sense and legitimate effort. This the public should know, especially in regard to the unique discovery of Professor Roentgen, which, to the world of science, gave new problems and new means of diagnosis to our profession.†

The question of the value of the X-Ray in diagnosis in bone-surgery and foreign bodies seems to be settled; it is beyond the experimental stage and has to come to stay. In medicine, and as a therapeutic agent, the results are to be determined and the best way to reach its full value in this direction has to be found by further experimentation. I desire to take this opportunity to urge the more general use of X-Ray examinations by our profession, and repeat the warning again, and again, that this branch should and must remain in our hands only, because there is a necessity of a great deal of refinement in

*Original abstract of paper read before the Western Surgical and Gynecological Association, December 27-28, Des Moines, Ia.

The American X-Ray Journal, February, 1899.

operating the X-Ray and its pictures, experience in examining, ability to read correctly the varying shadows, as well as a good deal of knowledge in anatomy, pathology and physiology. There are so many new "things," proprietary and otherwise, added to the list of the surgeon of today, that the individual can scarcely keep posted on all of them, but he will, with great avidity, appropriate those facts which can be instantly transformed into working force, and will always appreciate the demand for the practical, the utilizable, especially in a case of early and proper diagnosis.

Putting aside the theoretical discussion, the gain from which is conspicuously apparent, it is perhaps well to review the results of actual experimentation, illustrated by some radiographs. For the last three years I made about 3,800 exposures and had not a single burn. For such work the first requisite is an exciting apparatus* with a good interrupter, the knowledge of the power of our X-Ray, the distance of the tube from our object, the distance from the plate, the duration of exposure, and the angle at which the picture is taken. If we wish to make correct diagnosis and produce an accurate picture, we must never be satisfied with one radiograph of the case, but make it also our duty to compare the picture of the injured part with the normal one. Work as rapidly as possible, make short exposures, and protect your patient. Keep the obliqueness of X-Rays always in mind, make the radiograph as nearly life-size as possible to get sharply defined outlines, remembering that we are dealing with shadows only, and use a proper dividing screen (Dennison's) for measurements and exactness of your pictures.

As to the usefulness of the X-Rays, we know that it detects and diagnosticates fractures and dislocations. It shows correctly the position of the fragments of the broken bone before reduction¹ after, or whether it is a fracture or a dislocation, or both together. We may then observe through the dressing the growths of the callous, or photograph, through a plaster-of-paris, our case, after an attempt of reduction, and see if proper approximation of the fragments had been accomplished, and find perhaps, sometimes, that the union did not and could not take place. With the help

*Efficient tubes; good oil-insulated induction coil, capable of delivering a 12 or 14 inch spark. Interrupter giving about 30-34 breaks per second. (Wehnelts, Caldwell, etc.)

of the X-Ray we may follow the development of the bones and discover all deformities and diseases, as for instance: tuberculosis, necrosis, various bone changes as periostitis and osteosclerosis and osteoporosis.* We know, now, that fractures of the styloid occurs in four out of five cases examined for Colles' fracture, and the treatment, therefore, is nowadays altogether different for a vicious union; or when the nail is used, we may observe the progress made, see the marrow cavity and the nail perfectly, and transplate bones just as well. Any deviation of vertebrae and coxalgia, especially in beginning with osteitic area will show well. Examinations of infants and children may be made more easily than in adults. It is not necessary to remove the clothing for ankylosis. The X-Ray is useful also; gout and rheumatism are distinguished from each other, and in acromegaly the progress of the disease and improvement may be watched. For the obstetrician and gynecologist we have as far as yet nothing more than a better diagnosis of a large or small pelvis, or any other deformity of the same. There is one case of extrauterine pregnancy on record which was recognized by the Roentgen light. The same has inestimable value not only in military surgery† but may be considered very promising in detection of fractures of the skull, haematoma, bony growths, tertiary gummy tumors, hydrocephalus and foreign objects in the head, in the eye,** ear and other parts of the body.

Not long ago Julliard, in Geneva, applied the X-Ray and found a vesical calculus, renal calculi, of mineral constituents, and gall-stones containing excessive lime, and less chlolesterine may be seen but not always. Same with encapsulated Trichinae.

In the study of anatomy you may follow the injected arteries on a cadaver and observe arterio-sclerosis in a living subject. Aneurysm of thoracic aorta, enlargement of the pulmonary artery, rhythmic dilatation of the heart, transposed heart, size, mobility and action of this organ, are recognized by the X-Ray.

*Hahn, Hamburg, 1899.

†Senn, the Journal A. M. A., Nov. 12, 1898.

‡New York Medical Journal, by author, Dec. 2, 1899.

**Wound in the eye by a grain of lead. Burgeous in Un. méd. du Nord Est, Reims. The Chicago Clinic, etc., No. 4, 1899. Localization of foreign bodies in the eye and orbit by X-Rays. Archives d'elects med., Bordeaux.

Central pneumonia, emphysema, early pulmonary tuberculosis, acute miliary tuberculosis, fluid in the chest, as in pleurisy or empyema, pneumo-pyothorax adhesions, abscess, calcification of the pleura, etc., are also diagnosticated early when there are no physical signs, or this is confirmed.* For the throat we may easily recognize the larynx, trachea, cartilages, and the hyoid bone, and sometimes tumors of oesophagus. The chest and the abdomen are better examined with the screen, and you may outline the spleen, liver and kidney. Position and size of the stomach can be made out, and its peristalsis followed, during the digestion, if the patient takes a few eggs with a drink or subnitrate of bismuth, or if the stomach and large intestine be distended with some gas, they show in white areas on the screen. If you let your patient swallow a capsule, made for this purpose, any intestinal obstruction will be readily diagnosed. As the therapeutic agent, X-Ray is used in lupus, eczema, favus, psoriasis, acne, etc.

Now as to the fallacies of the X-Ray pictures, or so-called mistakes. These can be sometimes easily avoided, if we keep on our mind the source of the X-Ray and all the steps necessary in the photography of the invisible. If you take two common photographs made by different photographers, and of the same subject, they will not be exactly the same. With radiographs it cannot be otherwise. We know that the X-Rays are projected in all directions from that side of the reflector opposite to the cathode. Now in this beautiful green field of X-Ray activity, we have to work, using our fluoroscope as often as we can, and determining the shadows of an object opaque to the X-Ray. The localization has to be done by triangulation, just as well as with other shadows, with the help of a dividing screen, or with a double focus tube.† But the picture may yet be deceptive on account of the gelatin of the plate or the celluloid film. Mere scratch may be supposed a foreign body, dark shadow for a diseased part. We have to be careful in the interpretation of the X-Ray negatives, which are really full of detail, entirely lost in print. Sometimes objects back of the plate may appear upon the same, which might be due to the deflection of rays of very long wave lengths, or to X-Rays emitted by bodies in the field of the discharge apparatus,

*New York Medical Journal, Feb. 18, 1898, by the author.

Charles Lester Leonard, Philadelphia, American X-Ray Journal.

such as the air.* Distortion may also be produced by position and then the diagnosis will be sure to misguide. We have to remember that we are dealing with shadows only, which may be shifted by slightest rotation. Therefore fractures and dislocations may be made to appear exaggerated, especially when the operator is ignorant of the technique of the X-Ray, and forgets all about his anatomy, pathology, and principles of divergence.

If we put, for instance, a round, flat disk of lead over the second palmar interosseous and adductor pollicis, between the metacarpel bones of the left hand, and make a radiograph of this condition, the picture may be easily exaggerated and the shadow of that piece of flat lead taken for a round bullet, imbedded deep in the palm. But the expert who knows "how to read the shadows," and trusting to no appearances, will find out himself and make correct diagnosis with the help of his fluorometer, which not only marks the picture, but which provides an accurate cross-section of the body and supplies an absolutely correct right angle, at the intersection of the lines of which the foreign object must be found,† if it is there; if not, and the case was masked only, the fluorometer will give us the best evidence of any deviation, an evidence which may be proven and admitted in any court, for its impartiality, exactness, and truth. Without such a stamp of proof the radiographs as a legal evidence, would be worthless.

EDITORIAL NOTE.

Senate Bill No. 34 is stated in its title to be for the "Further Prevention of Cruelty to Animals in the District of Columbia." Its real object is first to prohibit vivisection, and second, to aid the passage of similar bills in all the state legislatures. We do not need to argue to a medical reader that the restriction proposed is unwise. We all know perfectly well that the researches of science along these lines of physiological investigation cannot be estimated. Every day we are experiencing their aid in more accurate diagnosis and more successful therapeutics. And yet we fear that few of our profession will even take the trouble to write a

*Further observations on the properties of the X-Rays, by W. C. Roetgen.

† Herbert Roberts, Academy of Medicine, St. Louis, May, 1899.

letter in protest against the proposed bill. Pray do not neglect this, but sit down at once and write a few lines to your senators or your congressman, and tell them that you hope they will oppose any restriction of scientific medical investigation such as is proposed in this bill. This is a matter which demands the attention of *every physician, and at once!*

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

VOMITING OF CHILDREN.

A. NIL FILATOW.

Professor of Pediatrics in the University of Moscow.

CHILDREN vomit more frequently than adults, and more easily the younger they are. In the first months, vomiting exists often because of an excessive supply of food. This form of vomiting has received the name of habitual vomiting or regurgitation. It is distinguished from vomiting, properly so-called by its sudden appearance in nurselings otherwise perfectly well. It is not preceded nor accompanied by any discomfort, change in the appearance of the face, nor effort, neither does the abdominal wall take any part in it. The child's disposition does not change either before or after the discharge of the vomitus. This throwing up is easily occasioned in nurselings by any slightly quick movements after nursing: rocking for instance.

Vomiting, properly so-called, on the contrary is always preceded by discomfort, which appears in pallor, restlessness, small frequent pulse, and cool extremities. The abdominal wall shares in the act of vomiting. The contents of the stomach is violently thrown out and the little patient utters a muffled cry, as if beginning to be strangled. Milk which is regurgitated can in no way be distinguished from that which is vomited. In either case it is liquid or coagulated, according to the time which has elapsed since the last meal. When vomiting takes place immediately after nursing, the milk is liquid. If, however, it occurs after some time, say about twenty minutes, it is coagulated. But it may happen, that though sufficient time has elapsed, the milk is not coagulated. In that case we have to do with a pathological condition of the gastric fluid: lack of acidity or ferment

of the gastric. The same is true if the vomited milk is mixed with a noticeable amount of mucus, or if the vomitus contains not only milk but also glairy liquid and bile.

If the blood in any quantity is found mixed in the vomitus, vomiting has an entirely different meaning. Haematemesis is very rare in children, for its usual causes, round ulcer, cancer of the stomach, and chronic diseases of the liver, are but rarely met in them. Certain cases of ulcer of the stomach and duodenum have been described, but they have been noted only in the first weeks of life. These ulcers give rise to haematemesis and bloody dejections, so abundant that the little patients usually die within a few days of acute anaemia. This tendency to hemorrhage is generally known as *melaena monatorum*.

Disturbances in nutrition are more often the cause of haematemesis than gastro-intestinal ulcers, in the new-born, and appear during life in general feebleness, petechiae, and a tendency to hemorrhages from the mucous membranes. After death we find extravasations of blood into the serous cavities and the substance of the internal organs. The pathogenesis of this affection to which Grandidier has given the name, temporary haemophilia of the new born is not yet sufficiently understood. In this class of haematemesis belong also cases of septicaemia, and of the disease called fatty degeneration of the new born described by Bahl (Bahl's disease), as well as certain cases of hereditary syphilis, the so-called hemorrhagic syphilis of the new born. Haematemesis of temporary haemophilia is distinguished from the haematemesis of *melaena monatorum* by the fact that hemorrhage in the former case is not only of gastro-intestinal origin, but is general, appearing from different organs. The circumstance alone suffices to establish the diagnosis. The order of frequency of the occurrence of hemorrhage in haemophilia is as follows: the umbilical cord, the digestive canal, the genital organs, the mouth and nose, the conjunctivae, the ears, the skin and the kidney. The blood now comes not in a quick spurt (arterial hemorrhages from the cord, the local affection, are exceptions) but flows, drop by drop from mucous membranes which have no lesion. Most frequently these hemorrhages occur from the fifth to the twelfth day and end rapidly in death in from three to five days. Cure is possible but is extremely rare.

Haematemesis which occurs in the second period of childhood not only shows a predisposition to temporary hemorrhages but also has another signification. Hemorrhages from the stomach occur in children in the course of purpura hemorrhagica (Werlhof's Disease) and more rarely in the prodromal period of hemorrhagic small pox. But in all these cases we must take care not to confuse, in new born as well as older children, true haematemesis with apparent haematemesis. In this last, the blood has been previously swallowed, while in true haematemesis the source of the hemorrhage is found in the mucous membrane of the stomach.

Sometimes, though very rarely, apparent haematemesis occurs in nurselings, whose nurses suffer from bleeding fissures of the nipple, and who swallow the blood mixed with the milk.*

In the second period of childhood epistaxis is the most frequent cause of apparent haematemesis, especially when the epistaxis occurs while the child is lying in dorsal decubitus. But as in epistaxis the greater part of the blood will always run out of the nose, the true cause of the haematemesis will be easily recognized. In the class of apparent haematemesis belong the cases of vomiting in which the blood is found mixed with the vomitus in the form of strings or small drops. This blood comes from the pharynx and is due to venous stasis during the act of vomiting. Bloody vomitus in this case indicates only the violence of the abdominal contractions during the vomiting. Sometimes we mistake for haematemesis vomiting of food colored reddish by wine or drugs, such as cochineal. Remember, therefore, that it is necessary to take into account all these causes of possible error, before making a positive diagnosis of true haematemesis.

In case of doubt we must have recourse to the microscopic examination of the blood globules. If these last are too much

*I have myself recently observed this for the first time in one of my children. I was frightened by the relatively large amount of blood vomited, and was only reassured when I found, still bleeding, on the nipple of the nurse, a deep fissure which she herself carefully concealed. More often apparent haematemesis occurs in the course of an operation for tongue-tie or hair-lip. Diagnosis will be easily established by the examination of the wound which is the source of the hemorrhage, by the presence of any little blood in the excretions, and finally by the relatively good general condition, while in true haematemesis the general condition is quite serious.

altered by the action of the gastric fluid so that the microscope even cannot solve the question, there still remains the chemical examination by Heller's test. This test, so highly recommended in hematuria, rests upon the fact that when an alkaline liquid containing blood and phosphates is exposed to the action of heat, the phosphates are precipitated, and in falling to the bottom take with them the blood pigment which gives them a reddish color.

In cases of vomiting we proceed in the following manner:

The vomitus is mixed with a weak solution of caustic soda. It is filtered, and, after having added to the filtered liquid an equal volume of urine (that is to say of a liquid containing phosphates), it is exposed to heat. As to confusing haematemesis with hemoptysis, this mistake is almost impossible, for pulmonary hemorrhages in children are exceedingly rare. Moreover, in haematemesis the blood is darker in color and the reaction is acid.

The diseases in which simple vomiting is usual may be divided into two groups, those in which the onset is accompanied by a considerable rise in temperature, and those in which there is almost complete apyrexia.

In febrile diseases, from the point of view of diagnosis, vomiting has a significance varying according to the age of the patient. In little children of from two to three years, it is of no importance in diagnosis. For in these we find vomiting in every illness accompanied by sharp rise in temperature, say 103° or 104° F.

In older children vomiting is noted at the beginning of certain infectious diseases: scarlet fever, small pox, erysipelas, and among localized diseases, peritonitis. We must, therefore, think of one of these diseases at the onset when in the presence of a child more than three years old whose fever is accompanied by vomiting. In other febrile diseases, vomiting is encountered at the onset only as an exception to the rule. In these cases vomiting should attract attention only when it occurs after fasting, when the vomitus is glairy and contains bile and has not been preceded by the ingestion of such drugs as antipyrine or salicylic acid or one of its salts. For these may occasion such vomiting.

In the interests of diagnosis the physician should not push the

administration of these antipyretic drugs, and, moreover, we are generally agreed that the temporary fall of temperature which they produce is of no great value.

Vomiting in the afebrile state or with a slight elevation of temperature is met in the most widely differing diseases. First of all it is necessary to consider whether the vomiting is accompanied by a cough or not.

After a cough vomiting is noted: 1st, in pertussis; 2nd, in dry pharyngitis where the mucous membrane is so hyperaesthetic that some fits of coughing to produce, reflexly, vomiting; 3rd, in chronic hyperplasia and cheesy degeneration of the bronchial glands; 4th, in the bronchial catarrh which occurs in the course of pertussis; 5th, in bronchiectasis with abundant secretion; 6th, in empyema where the pus seeks a way out through the bronchus.*

The diagnosis of these cases presents no difficulty. The two last are easily recognized by auscultation and percussion, and in the others, if physical examination does not furnish any exact information, the course of the disease and the character of the cough even, will give the guided elements for diagnosis. When vomiting occurs at the end of a fit of coughing in a nursling, we must think at once of pertussis. For in nursing babies this disease is rarely accompanied by the characteristic whoop, while vomiting is never absent. On the other hand, other diseases of nurselings which are accompanied by cough and vomiting are rare.

Vomiting which is not accompanied by cough or fever is due to an irritation, direct or reflex, of the mucous membrane of the stomach.

Gastric vomiting due to direct irritation may result from the introduction into the stomach of irritants, undigested food or emetics.

Vomiting thus produced by direct irritation of the gastric mucous membrane is characterized by the fact that it is neither

*From the point of view of symptoms this last kind of vomiting ought to be entirely separated from those preceding. Empyema does not really provoke the simple expulsion of the gastric contents by reflex excitation. The greater part of the vomitus consists of the pus, which has traversed the bronchus and trachea, causing finally a cough and vomiting. In this case, therefore, we have not an ordinary vomiting.

accompanied nor followed by any disturbance. The general condition of the child remains good, not even the appetite suffers any loss. But such vomiting may be also the symptom of local disease such as dyspepsia or gastric catarrh.

Reflex vomiting is generally caused by irritation of the digestive canal, the abdominal wall or the brain.

Every abdominal pain, whether of nervous or inflammatory origin, may be accompanied by vomiting, so also any obstinate constipation, especially that following obstruction of the bowels where the incontrollable vomiting finally takes on fecal character, in odor if not in appearance. Intestinal worms may also occasion vomiting. We suspect these when the vomiting takes place before breakfast or when the ingestion of food makes nausea and vomiting disappear. Diagnosis becomes sure if after microscopical examination we find in the dejections, the ova. The form of these ova permits us to determine the kind of parasite. Another sure sign of the presence of worms is the appearance of the body or portions of their body in the dejection.

Vomiting of cerebral origin follows certain acute or chronic diseases of the brain and of the meninges. Some authors describe certain characteristics as peculiar to vomiting of cerebral origin. Thus it is never preceded by nausea as is that constantly noticed in vomiting of gastric origin. It never follows immediately after the ingestion of food, and takes place without effort. One would say that the patient threw up not the contents of the stomach, but the contents of his month. They say furthermore, that vomiting of cerebral origin often takes place fasting and when the patient changes his position to arise. We must certainly take into account all these characteristics, but their value is strictly relative. Exceptions are numerous. We see people with cerebral disease who vomit immediately after a meal. Vomiting is sometimes preceded by nausea and it may also occur after the ingestion of certain drugs. On the other hand, vomiting of gastric origin is not always preceded by nausea and may take place when the patient changes from a horizontal to an upright position. A more constant characteristic of vomiting in patients with cerebral disease is its obstinacy, which resists all treatment whether dietetic or medicinal. Moreover it produces no relief, while after vomiting, due to gastric irritation, the patient is relieved.

The following signs, however, do favor vomiting of cerebral origin: the tongue remains clean, the breath is not bad, and the dejections are normal; there even exists a tendency to constipation without there being any meteorism or pain due to pressure on the epigastrium; severe headache which may, however, make us suspect at the first tuberculous meningitis, sleepiness, and irregular slow pulse. But no one of these signs has any absolute value, for individually each one of them may cause a mistake, and there ensemble alone has any real value for diagnosis.

It is not unusual to find oneself in the presence of the following clinical picture. A patient has a severe headache unilateral or general lasting several hours; then he vomits, falls asleep, and then awakes feeling perfectly well. These attacks are very frequent in children from seven to ten years old, but they are not specially rare in very young children. Some times they take place every week, but in other cases they are less frequent, once a month, or two or three times a year. These attacks of migraine are often mistaken in children for acute hydrocephalus, for the little patients are very pale during the attack, the pulse becomes slow, and sometimes even there is a slight rise in temperature. The mistake, however, does not last long; for after the attack and refreshing sleep there remains not the slightest trace of sickness. Vomiting during migraine, however, would be more easily attributed to a cerebral disease were it not for the many attacks and for the fact that sleep would be difficult to attain.

Vomiting which follows the subcutaneous injection of apomorphine may serve as an example of vomiting, due to intoxication of the blood. In this class belong also the uremic vomiting of acute and chronic nephritis and that which follows etherization. It is characterized by its obstinacy and sometimes does not yield to any treatment for several days after an operation. Uncontrollable vomiting which follows the administration of chloroform is sometimes influenced in a way almost magical by a simple change of air; for example, moving the patient from the hospital to his home.*

*It seems to us that this moving should not be carried out without the greatest precautions. Particularly is it wise to avoid sudden changes in the position of the patient, and specially the upright position, and a quick change from the warm air of the operating room to an outside temperature, which may be too cold and may even cause syncope.

Leyden has described vomiting due to the irritation of exhaustion. (*Zeitsch. f. Klin. Medic. XII. 4 Heft.*) According to this author it results from excessive irritability or hyperæsthesia of the stomach in nervous patients during convalescence from serious illness. It is one of the most serious forms of vomiting, for it rapidly attains a very great severity and puts the life even of the patient in danger. This condition is often accompanied by convulsive hiccough. Occasionally a slight deviation from the usual routine or the administration of a drug (in Leyden's case it was antipyrin) is sufficient to cause it.*

According to Leyden, this vomiting is specially grave in convalescence from cerebro-spinal meningitis, typhoid fever and diphtheria. In typhoid fever he has seen incontrollable vomiting during treatment by cool baths. It stopped when hydrotherapy was omitted.

Nervous vomiting in convalescence from diphtheria deserves special attention because in infancy we encounter it much more frequently after diphtheria than following the other acute infectious diseases. It probably depends upon the paralysis of the vagus nerve. We have only observed it after the severest forms of diphtheria. Its appearance has been generally preceded by paralysis of the soft palate and by feeble or irregular and slow pulse. Just before vomiting the patient complains of pain in the stomach which may last a few minutes, or two or three hours. Vomiting is followed by considerable weakness in the cardiac action, shown by weak pulse, sometimes irregular; by dilatation of the right heart; by increase in size and sensitiveness of the liver, due to passive hyperemia; by oliguria; and by albuminuria. The patient may die of paralysis of the heart on the first, but more often death takes place on the second or third day.

Cure is possible, but is very rare. So that, with a symptom complex, consisting of weak action of the heart, abdominal pains,

*Although children generally may take relatively enormous doses of antipyrin, this drug is capable of causing vomiting in the young as well as in adults. The tolerance which children usually have for antipyrin as well as many other therapeutic agents, is explained by the rapid and perfect kidney filtration, proven by accurate chemical analysis of urine collected right after the ingestion of them. But if the kidneys and the liver as well (as Rogers states) have been damaged by the passage of the toxins of bacteria, we may then readily believe that the gastrointestinal intolerance would be then more or less marked. (See also: *These de Docterat du Dr. Claude, Paris, 1897.*)

and vomiting appearing during convalescence of diphtheria, the prognosis must be considered very bad.

In addition to these cases of hyperæsthesia of the stomach following infectious diseases, incontrollable vomiting is observed also following chlorosis and general nervousness, as in the following case:

A young girl, eleven years old, always well before, entered the hospital for incontrollable vomiting, which came on many times a day during the last two months. The patient never vomited when fasting, but soon after taking solid or liquid food. Before the beginning of these attacks of vomiting the patient had had hiccough during an entire month. According to her parents, she had had only four movements of the bowels in the two months which preceded her entrance. The patient did not appear to be very much debilitated, through a little pale and weak. Before her sickness she had been very strong; a great walker. Now, she cannot walk a kilometer even. Appetite is not bad, thirst normal, tongue clear, epigastrium, not unduly prominent, nor hypersensitive. The abdomen is markedly distended, but is not painful nor sensitive to pressure; no oedema. It was ten days since she had the dejection. The presence of worms had never been observed. Sleep is good, urine normal, no albumen, no fever, pulse regular. The day of her entrance into the hospital she vomited twice in the morning, after a few spoonfuls of soup; in the evening, after a drink of tea, vomiting was produced without any effort, but with astonishing ease. Second day again vomited twice. Third day no vomiting; natural movement of the bowels. During the next ten days there was a daily movement of the bowels, but vomiting ceased. Treatment: Fowler's solution, five drops before the two principal meals. Two days afterwards vomiting and constipation completely disappeared and did not reappear during the succeeding week, though the arsenic had been stopped. After a week more the patient left the hospital considered cured, but some months later we received her again with the same uncontrollable vomiting. This time the arsenical treatment gave no result. The patient was taken away by her parents and we have seen her no more.

We should consider whether we have had to do with this

case with a pretended illness. The fact that she vomited with the greatest ease, after taking very small quantities of food, leads us to suspect that she did not swallow it, but threw it out of her mouth direct.

Henoch has observed vomiting, occurring usually in the morning after breakfast, in nervous children when food had been eaten very rapidly, as a consequence of hyperæsthesia of the stomach.

In two cases, one a boy, seven years old, the other, a girl, eight years old, the vomiting lasted well into the day following the nervous excitement. Bouveret (*Traité des maladies de l'Estomac*) reports the following case, which very well shows the influence of emotion as an occasional cause of nervous vomiting in patients predisposed to it:

A young girl, thirteen years old, is suddenly brought to the side of the bed, whereon her grandmother lies dead, and obliged to kiss the face of the body. She experienced a violent shock; she lost her appetite, and was wakeful; she had night-mares in the night, and finally began to vomit after each meal. Soon the irritability of her stomach became so great that the poor child lost her strength and could not leave her bed.

This vomiting may endure for several months with some short periods of relief, but without serious results, and they stop spontaneously, or under the influence of tonic treatment.

We establish the diagnosis of vomiting of nervous origin by excluding diseases of the stomach and other organs on which it might depend. Nervous vomiting is often characterized by its obstinacy, by the ease in which it takes place, without any previous nausea, and by a contrast which is presented by its long duration on the one side, and the generally good condition, and continuation of good appetite on the other.

We must distinguish from vomiting the throwing up of food and drink which has not reached the stomach, as occurs in stenosis of the œsophagus and in paralysis of the soft palate. Stricture of the œsophagus occurs in children almost exclusively as a result of burns of hot water or corrosive substances, such as sulphuric acid. The diagnosis is not difficult. The impossibility of swallowing solid food or large quantities of liquid is usually sufficient

together with the history of the case to establish the diagnosis. As to the location and degree of the stricture, these will be established by means of the sound.*

Pharyngeal paralysis is often observed after diphtheria, and is characterized by this fact, that the patient chokes when he tries to swallow solid or liquid food, which is then returned by the mouth or by the nose. The voice is nasal. On examining the throat we shall see that the uvula remains motionless during phonation, or when we touch it.

[Translated from *Diagnostic et Semeiologic des Maladies de l'Enfance*, which, in turn, is a translation of the Russian, by Dr. E. Perier, who is editor of *La Médecine Infantile*. The foot-notes are added by the latter.]

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting December 12, 1899.

THE PRESIDENT, DR. E. E. GRAHAM, IN THE CHAIR.

Dr. C. F. Judson exhibited a patient with Erb's Paralysis; one with Rotary Spasm, and one with Cerebral Paralysis.

CASE I.—Rotary Spasm. The movements of the head were from side to side, alternating with nystagmus, and aggravated by excitement. The child was rachitic. The mother had three attacks of chorea in childhood.

CASE II.—Erb's Paralysis, the result of a forceps delivery. When observed in the dispensary there was marked atrophy of the deltoid, trapezius and extensor muscles of the forearm. The supra- and infra-spinatus, rhomboidei and serratus magnus were also affected. Trophic and sensory changes were present. Su-

*Vomiting or regurgitation can be produced only after a certain time, when, for example, in a case of atresia of the œsophagus it ends in a cul-de-sac, forming a diverticulum, in which can perhaps be retained the small quantity of milk or sweetened water, which is given a new-born baby the first day. Dilatation of the œsophagus can give occasion for vomiting, as in the case of the little girl of Kurz, cited by Baginsky. This child, aged thirteen, from her birth could take only liquids; she vomited all solid food, except she took it in certain positions, which permitted the food to pass into the stomach. Some times they could prevent the little patient from throwing up solid food by making her laugh or weep, by bending her head back, or by making her open her mouth.

pination was effected by the biceps. There was no contracture at the elbow, but the fingers could not be straightened.

CASE III.—Cerebral Hemiplegia. Girl, aged 2 years, 9 months. At the age of ten months paralysis of the left half of the body came on suddenly, ushered in by convulsions and followed by stupor. She lost power of speech completely. At 18 months the convulsions recurred during the night and again the night before she was exhibited. Facial paralysis (left sided) was first noticed at this time. At date of observation child had partially recovered, could speak a few words and seemed intelligent. Post-paralytic phenomena observed were muscular twitching and a fine tremor of both arm and leg. There were moderate trophic changes. The patellar reflex could not be elicited; the plantar was present.

CASE IV.—Cerebral Diplegia. (Reported, but not exhibited.) M. T., 15 months. Labor tedious, breech presentation. Examination showed marked muscular weakness. Expression of defective intelligence. The head and body could not be supported, but were constantly thrown backward in a spasmodic manner, while the legs were rigidly extended. Markedly ataxic movements of arms and legs were noticed when she lay on her back. There was inability to evacuate the bladder, except at long intervals, 2 or 3 times in the 24 hours. The plantar, patellar, and abdominal reflexes were present. No ankle clonus. The child knew its toys, grasped objects fairly well, and could flex legs on pelvis with the aid of its hands. She could speak a few words. It was evidently a birth paralysis, probably due to meningeal hemorrhage.

DISCUSSION.

Dr. John Madison Taylor: I wish to ask Dr. Judson to tell us what are the rotary and spasmodic movements which the child makes, other than that we now see, which is chiefly a tendency to view objects sidewise, and nothing else. This could be due to a high degree of refractive error in the eye, among other things, and such a condition alone might produce rotary spasms.

Dr. J. P. Crozer Griffith: I had the opportunity of seeing the first case, that of a colored child, when it first came to the hospital and was in my service at the time. At first its movements

were very striking. It had no nodding, but had an almost constant rotary movement of head. This movement would cease at times, and be replaced by the nystagmus. Apparently the two did not occur together. The rotary spasm is not at all common as far as my experience goes and does not seem to be dependent on any organic lesion. Irritation of the cortical centres is generally supposed to be the cause.

In regard to the case of paralysis in which there was some history of tremor, I was much interested some years ago in finding how few cases, comparatively, there were of post-hemiplegic tremor reported. Choreiform movements and even athetosis appear to be much more common. I have come across but one case of tremor, though I have seen a large number of cerebral palsies.

Dr. A. A. Eshner: I wish to say a word about the first case, that of rotary spasm. We have seen a not inconsiderable number of such cases at the Infirmary for Nervous Diseases, and though Dr. Griffith did not say so, while of course he knows, rickets is probably the most important etiologic factor. In all of the cases that I have seen rickets has been the cause and with the correction of this condition the spasm disappears.

Dr. Griffith's remarks in relation to athetoid movements, choreiform movements and tremor in relation to cerebral lesions were illustrated in an interesting manner by a case exhibited recently by Dr. Spiller before the Neurological Society, in which there evidently was a cerebral lesion occurring early in life, without noteworthy paralysis, but in which there was unilateral intermittent or remittent tonic spasm of varying intensity. It seems to me that these several phenomena are dependent upon similar causes, their differing variations depending upon differences in localization.

It may thus be conceived that a lesion in one portion of the central nervous system might give rise on the one hand to the more familiar phenomena encountered: the palsies, a lesion in a neighboring situation to the athetoid movements, and other lesions in nearby situations to the choreiform movements and the tremor respectively. In most cases the spasmodic movements are associated with palsy. Rarely, as in the case of Dr. Spiller, the spasmodic may be present without the paralytic phenomena.

Dr. Judson closes: I did not have an opportunity of observing the case until last summer, and the mother was not able to give me a clear description of the early convulsions. I was not able to determine in what group of muscles they originated. They had not recurred until last night for a period of six months. The last attack seemed epileptic in character. The post-paralytic phenomena noticed were a fine tremor of the hand and a spastic condition of the leg, and this was only observed by the mother occasionally.

With regard to the colored child there was quite marked evidence of rickets; the epiphyses were enlarged, the abdomen prominent, the anterior fontanelle open at 16 months and teething somewhat delayed. Under better conditions as to diet the child improved.

These cases were observed in the dispensaries of Drs. Griffith and Westcott at the Children's Hospital.

Drs. Alfred Hand, Jr., and F. W. Stewart reported a case of Dilatation of the Colon.

The patient was a boy six years old in whom distention of the abdomen and constipation had been noticed from the age of three months. On admission the greatest girth of the abdomen was midway between the umbilicus and the ensiform cartilage, the measurement being 71 cm. Massage, strychnin and electricity relieved the dyspnea and the distention so that two weeks later, before leaving the hospital, the girth had been reduced 12.5 cm. (5 inches.)

He was admitted to the Pennsylvania Hospital August 30, 1899; seventeen days later he died of exhaustion. At the post-mortem the colon was found to be enormously distended, measuring 17 cm. in circumference. Ten cm. above the ileo-cecal valve was a hard fibrous constriction measuring 6 cm. in circumference; 30 cm. above the anus, a similar constriction 5 cm. in circumference. The color walls were thickened and covered with large ulcers. The rectal circumference was 16 cm.

All cases of chronic constipation with a persistently swollen abdomen should be scrutinized by the surgeon. It is often impossible to determine whether the dilatation be due to a remedial obstruction, or be "idiopathic"; and, even if no cause be found

after exploratory incision, the dilated colon may be drained by an artificial anus, excised, or sidetracked by implanting the ileum into the rectum, thus allowing the colon to atrophy. Resection of the sigmoid might be advisable, as dilatation of this portion of the bowel alone has been observed in several cases. Suturing of the sigmoid to the anterior parietal peritoneum would prevent any kinking of this portion of the bowel.

DISCUSSION.

Dr. D. L. Edsall: It seems to me that the reason that so many of these cases are considered idiopathic is that when they come to autopsy the distention of the bowel is so great as to disturb the relations of the various parts of the bowel and of the surrounding structures to such an extent, that a cause which may have been evident early in the disease becomes masked. For instance, in the case which I reported here last year, the cause was undoubtedly kinking of the sigmoid; had this case reached the stage of very extreme distention of the colon, the condition could scarcely be attributed to such a cause, because it would be most logical to assume then that the kinking was secondary to the distention. I have been confirmed in my belief that kinking in the sigmoid is a cause of this condition which must be considered probable in many cases, and also that the terms idiopathic and congenital are frequently only masks for an ignorance which is the result of lack of opportunity for autopsy as of imperfect consideration of the results of autopsy. The case recently reported by Göppert in the *Archiv. f. Verdauungskrankheiten* would commonly have been classed as congenital and idiopathic. The child was born in apparent good condition, but it was extremely constipated and soon presented the usual appearance of dilatation of the colon. Göppert saw the case in the second week of life, and investigating the rectum found distinct kinking at the upper part. The treatment was based upon the discovery of the kink; the bowel was washed out and a tube placed permanently in the bowel, the result being practical cure after a series of months of treatment. The review of the literature, which was very carefully undertaken, demonstrates that many cases already reported may fairly be classed as resulting from kinking of the sigmoid or upper part of the rectum.

I do not wish to claim that kinking of the sigmoid is the chief or only cause of dilatation of the colon, but I do think this point has not been sufficiently emphasized in most of the papers on the subject.

Dr. Hand closes: With regard to the medical treatment I do not wish to emphasize to too great extent the improvement which was apparent in this case. It simply meant, to my mind, that the boy was getting in fit condition for some surgical procedure, the making of an artificial anus, or whatever seemed best. This wish could not be carried out because of his removal from the hospital.

Dr. J. Madison Taylor read some notes on unusual forms of disease occurring in children: 1, a fatal case of hemorrhagic purpura with general hemorrhages; 2, scurvy resembling syphilitic hemiplegia; 3, Hodgkin's disease in a boy of seven years; 4, arthritis deformans in a boy of nine years.

DISCUSSION.

Dr. J. T. Rugh: Some years ago a case of arthritis deformans in a boy of eleven years came under my notice. The condition was first diagnosed tubercular arthritis of the knee, but upon close examination I found both knees equally affected, also both ankles and beginning involvement of the small joints of the hand. I had the boy under observation and treatment for three years and when I last saw him he was well. The treatment consisted of cod liver oil and syrup of hydriodic acid, one drachm t.i.d.; it removed all traces of the disease.

Dr. Alfred Hand, Jr., reported a case of multiple auto-vaccination.

The patient, a boy two years old, was seen five weeks after vaccination; the protective dressing had been removed after ten days, and a week after this removal there began to appear singly a number of vesicles in different parts of the boy, evidently carried by the finger-nails in scratching, the lesions becoming pustules and drying to crusts, leaving a pitted scar.

DISCUSSION.

Dr. J. H. McKee: Several years ago, while vaccine physician, I saw several of these cases of multiple inoculation from the initial lesion. In some of these a lesion of the skin which had pre-

existed became infected, and in others multiple vaccinations appeared to occur without any previous lesion of the skin whatsoever. In one case I saw such multiple inoculation occur where the irritation was produced by one of the old-fashioned rubber plaster shields. Whilst speaking of vaccination, I recall several cases in which various skin lesions appeared upon the body after vaccination. Dr. Schamberg believes that most of these cases represent infections. I had such an experience a short time ago in my own family. Though vaccination was done with great precaution there appeared some diffuse redness of the skin, some papules and a few inflammatory nodules. The local lesion itself was very slight.

I wish to mention in the same connection a method of vaccination which I have been employing at the suggestion of Dr. J. P. Arnold. It consists in the use of a 30 per cent solution of sodium hydroxide, first cleaning the surface with sterile water and then placing a drop of the solution upon the arm. In the course of 40 or 50 seconds, or when the epidermis presents a honey-combed appearance, wash off the solution and blow the glycerinate lymph on that point. I am informed that this is a known method, but I have never heard of it before. In thirty previous vaccinations, I have not seen a single failure with this method.

TUBERCULOSIS IN CHILDREN.

In an interesting article with the above title, Dr. William H. Happel makes the following excellent suggestions:

PROPHYLAXIS.

Since children so readily contract the disease and so speedily succumb to it, it is of the utmost importance that proper prophylactic measures be instituted wherever the surroundings are such that the infant may become contaminated. All sputum from tubercular individuals about the infant or child should be rigidly collected and destroyed. Tuberculosis patients, including the mother especially, should not be allowed to kiss the child, nor should the mother in such a case nurse the child.

In the selection of a wet nurse, the greatest care should be

exercised in obtaining a woman about whom there is not the slightest suspicion of tuberculosis.

Milk from dairies not under constant veterinary supervision should be exposed to a temperature sufficiently high (170 degrees) to destroy any possible tubercle bacilli.

Occurrences of inflammation of the mucous surfaces, especially of the respiratory apparatus should be watched with the greatest care. The danger of infection with measles and pertussis should be avoided. Enlarged tonsils, adenoids and the ordinary diseases of the nose and throat should receive the earliest possible attention. The child should be early accustomed to outdoor life. The living rooms should be kept at an equal temperature. They should never be overheated. The diet should consist of the most nutritious foods, such as milk, and at the proper time, of eggs and beef. In the winter, it is wise to add to these, a pure cod liver oil, not emulsified.

TREATMENT.

After the tubercle bacilli have once gained entrance, the child should be removed, if possible, from the city to a dry, warm climate. If this is not possible, he should be taken into the air as much as possible, no matter if there is present fever or cough. In his home, he should have the airiest and sunniest room at his disposal. As a diet in this case, milk ranks first. When digestion is unable to do its work, some preparation of milk, as Koumyss or Matzoon, may be substituted.

Among drugs, but two can be said to be of service. They are cod liver oil and creosote.

In very young children, creosote is best given in an emulsion and in very small doses, $\frac{1}{4}$ to $\frac{1}{2}$ drop. In older children this dose may be doubled or trebled. When the oil is not well borne, inunctions may be used.

Hypophosphites, arsenic and iron may be used in some cases, but in many they are not well borne.—*Albany Medical Annals*.

BOOK REVIEWS.

"General and Local Anesthesia." By Aimè Paul Heineck, M.D., Clinical Instructor in Genito-Urinary Diseases College of Physicians and Surgeons, Chicago; Clinical Instructor in Gynecology, Chicago Clinical School; Clinical Instructor in Surgery Northwestern University Woman's Medical College; 124 pages, \$1.00. G. P. Engelhard & Co., Publishers, 358-362 Dearborn St., Chicago.

The topics include the uses of Chloroform and Ether; the use of Anesthetics in Childbirth; Anesthetics for Diagnostic and Therapeutic Purposes; Anesthetics in Surgery; Selection of the Anesthetic as governed by the nature of the Operation; Posture and Preparation of the Patient; Rules for Administration of Chloroform and Ether; Precautions Before and After; What to do in Cases of Accidents; Methods of Applying Local Anesthetics; the Use of Cocaine in Nose and Throat; in Genito-Urinary Surgery; Precautions for Cocaine Anesthesia; Infiltration Anesthesia and its Technique.

This book will be welcomed by surgeon and physician alike. Being the only book in English on the subject, it is sure of a large circulation. Although we have had ourselves considerable experience in the use of anesthetics, we do not hesitate to say that the book makes many new suggestions to us, while at no point do we detect a contradiction of our own experience. As suggested above, the subject is treated broadly and fully.

Hermann Ludwig Ferdinand von Helmholtz. By John Gray M'Kendrick, M.D., LL.D. Published by Longmans, Green & Co., 91 Fifth Avenue, New York City. 1899.

This latest of the Masters of Medicine presents the life of one not so well known nor so often quoted as some of the others already presented to us. His great physical and physiological researches entitle him to a place in the front rank of the great minds of this century. The author has pursued the method of considering not merely the life and character of the man. He presents, also, a well-written sketch of the development of science up to his time in the lines wherein he was most successful. The book thus gains a historical as well as biographical value.

"Text-Book of the Diseases of Women." By Charles B. Penrose, M.D., Ph.D., Professor of Gynecology in the University of Pennsylvania. Illustrated. Third edition, revised. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1900. Price, \$3.75 net.

Three editions in three years is pretty good proof of the value and success of a book. We congratulate Dr. Penrose. Few additions have been possible to this edition. Even gynecology does not move rapidly enough for that. The revision is careful, however, and brings the book where it belongs—strictly in line with the best modern thought and practice. The illustrations are specially clear and the descriptions of symptoms, pathological conditions and operative procedures are models.

"Manual of the Practice of Medicine." By A. A. Stevens, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania. Fifth edition, revised and enlarged. Illustrated. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1898. Price, \$2.00 net.

This convenient book, with its flexible covers, its carefully arranged subjects, excellent typography and useful, though brief suggestions in etiology, pathology, diagnosis and treatment, is intended "for students." If you are still willing to class yourself there, you will find it of much value. You can carry it with you anywhere and thus profitably employ time often wasted in travel from patient to patient.

"The Anatomy of the Central Nervous System of Man and of Vertebrates in General." By Professor Ludwig Edinger, M.D., Frankfurt-on-the-Main. Translated from the Fifth German Edition by Winfield S. Hall, Ph.D., M.D., Professor of Physiology in the Northwestern Medical School, Chicago, assisted by Philo Leon Holland, M.D., Instructor in Clinical Neurology in the Northwestern University Medical School, Chicago, and Edward P. Carleton, B.S., Demonstrator of Histologic Neurology in the Northwestern University Medical School, Chicago. Illustrated with 258 Engravings. $6\frac{1}{2} \times 9\frac{1}{2}$ inches. Pages xi-446. Extra Cloth, \$3.00. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia. 1899.

The new fifth edition of this famous German work has given an opportunity to present a fresh translation to American readers.

It is an exceedingly careful and scientific study of the comparative morphology of the central nervous system, which has been in this edition very much enlarged, Parts I. and II. which cover nearly 200 pages, being new.

Part I. is introductory. The fundamentals are well stated and the history and methods of study explained. In Part II. we have a full statement of the development of the brain of the embryo and its comparative likeness to and differences from other vertebrates. Many of the terms used are not familiar to the ordinary practitioner. But they are all explained and abundantly illustrated, so that the book which will be of most interest to the man who makes a special study of nerves and nerve force, is also of much value to every man who seeks to keep up with the times.

Along the lines of this specialty there now appears to be most yet to learn, and in the therapeutic relief of diseased nervous conditions is the widest opportunity for the American physician.

A TEXT-BOOK ON PRACTICAL OBSTETRICS. By EGBERT H. GRANDIN, M.D., Gynecologist to the Columbus Hospital; Consulting Gynecologist to the French Hospital; late Consulting Obstetrician and Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecologist Society, etc. With the Collaboration of George W. Jarman, M.D., Gynecologist to the Cancer Hospital; Instructor in Gynecology in the Medical Department of the Columbia University; late Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, etc. Second edition. Revised and enlarged. Illustrated with sixty-four full-page Photographic Plates and eighty-six Illustrations in the Text. $6\frac{1}{2} \times 9\frac{1}{2}$ inches. Pages xiv-461. Extra Cloth, \$4.00 net; Sheep, \$4.75 net. The F. A. Davis Co., Publishers, 1914-16 Cherry Street, Philadelphia.

The above transcript of the title page of a very excellent text-book attests the high standing of the author and the character of the publisher's work. In our examination of this second edition which falls the first within four years, we have been specially impressed by the fine illustrations. With their photographic exactness they are very different from those which appeared in the best books even a few years ago. The student, even if he cannot have a large obstetric experience, need not go far astray in his later professional life if he has faithfully conned these pages and thoughtfully studied the photographic illustrations.

Obstetric surgery is of course the line when most progress has

been made in these later years and it is here that most of the changes in this edition occur.

Progressive Medicine—Volume IV. A quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 398 pages, 51 engravings and 5 plates. Lea Brothers & Co., Philadelphia and New York. December, 1899.

This volume contains chapters as follows: Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas and Peritoneum. By Charles G. Stockton, M.D. Genito-Urinary Diseases in the Male, and Syphilis. By William T. Belfield, M.D. Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopedics. By Joseph C. Bloodgood, M.D. Diseases of the Kidneys. By John Rose Bradford, M.D., F.R.C.P. Physiology. By Albert P. Brubaker, M.D. Anatomy. By Frederic H. Gerrish, M.D. Hygiene. By Henry B. Baker, M.D. Practical Therapeutic Referendum. By E. Q. Thornton, M.D.

These are not merely sketches, but well-written essays, presenting in form easily understood and readily employed the best of current thought. Thus, the first article contains 75 pages, while three of the others are 125 pages long. Hence the profession feel that they are getting the latest and best, and complete enough for immediate use. The wide circulation already secured is, we believe, sure to steadily increase.

Beginning with the March issue and extending through ten numbers there will be published in *The Bookman* a story entitled "Stringtown on the Pike," by John Uri Lloyd. The scenes are laid in Kentucky, where has been the centre of so much interest lately. The characters are of the original type which only Mr. Lloyd knows so well how to delineate. We believe the story will be eagerly read both because of the author's great literary genius and because it will help us to understand those people whose standards of moral action seem to vary so greatly from our own.

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ORIGINAL COMMUNICATIONS

GALL STONES—SOME PATHOLOGIC AND CLINICAL PHASES OF.

A. H. CORDIER, M.D.,

Professor of Abdominal Surgery in University Medical College.

AMONG the most common diseases of the abdominal cavity may be mentioned the diseases of the biliary ducts, and of this class of pathology cholelithiasis is the most prevalent. In fact so common is this condition that in several thousand post-mortems no less than 7 per cent. of cases with gall stones have been found, and it is a curious conclusion at which some clinicians have arrived, when they use this as a reasoning, that as these cases did not present any evidence of the presence of the stones, it proves that the majority of cases suffering with gall stones will get well if let alone. Dead patients are poor witnesses to prove the efficacy of any method or remedy, even though they seemingly died from causes remote to the condition under discussion. It is often the case that a gradual and unrecognized condition undermines the general physical standard and thereby destroys that natural immunity so essential to ward off the invasion of a life-destroying process. Many cases to gall stones present no direct testimony of their presence, while others give evidence of their presence in the most emphatic symptomatic language. The causation of the formation

of gall stones has been a theme for many years by some of the ablest clinicians. A few years ago in the direct causes were enumerated:

Stagnation of bile.

Inspissation of bile.

Advanced age.

Sedentary habits.

Tight lacing.

Abdominal tumors.

all in a measure acting in the same way; that is, interfering with with the free bile circulation.

The bile is a watery secretion containing 1 to 3 per cent of solids with bile pigment and bile acids as normal ingredients.

It would seem that in the young (under twenty) the disease is rare, and that the age of 40 furnished the largest number of cases until the age of sixty is past, then the disease becomes relatively more frequent, and it is strange but true that after this age there are fewer cases presenting symptoms pointing to the presence of stones (colic), etc.

It must be recalled that old people are more frequently affected with malignant diseases in the pyloric and duodenal segments of the alimentary canal and that modern pathologists recognize in the presence of gall stones a factor in the production of these neoplasms; hence they are treated for the results and not the original cause.

My limited experience has certainly not been in accord with that of many writers in the relative frequency of this disease in the male and female. Most of my cases have been in males. Most writers place the proportion at females 5 to males. The causes especially present in females not in males being tight lacing, laxity of abdominal walls, child-bearing; 90 out of 115 cases in females had borne children.

Lunatics from their sedentary habits are said to be prone to gall stones. I do not believe that idleness alone ever produced a gall stone, if so the disease would be more prevalent. Heredity is not a cause. Diet alone is not a cause unless of a character to induce a gastro-duodenitis. The normal ingredients of the bile entering into the formation of gall stones are: bilirubine, biliary salts and cholesterine in abnormal quantities often found in the gall blad-

der. A pure cholesterine stone is rare, usually has some other ingredient as the nucleus. The stones found in the hepatic ducts are, as a rule, the bilirubine calcium stones, while those found in the gall bladder have bilirubine calcium as a nucleus with cholesterine on this nucleus; the original foci having its origin in the hepatic duct, subsequently finding its way into the gall bladder. The little hard, round, solitary stones found in the ductus choledochus are, as a rule, bilirubine calcium stones. It is true most stones are found in the gall bladder, for it is here that the conditions most favorable for the formation and retention of stones exist, as will be understood later in my paper, where I mention the latest and most acceptable theory as to the causation of gall stones. The older writers maintained that these stones were the result of either an over production of cholesterine by the liver or to a want of its proper solvent in the bile, thus permitting the substance to deposit and form stones. Later authors, and I believe they are correct, say that cholesterine is a result of disintegration of the epithelium of mucous membrane and glands of the gall bladder and of larger bile ducts. Cholesterine is a substance of wide distribution over the body. It is found in various forms of growths and fluids of the body, in the expectoration of consumptives, in pus, especially in locations where there exists a mucous membrane.

Bile from the liver shows .07 per 1000 of cholesterine, while the analysis from bile in gall bladder shows 3 to 11 per 1000.

Occasionally pure masses of cholesterine are found in the gall bladder. The preponderance of the evidence is against the old theory that these stones are found by the bile failing to hold in solution the cholesterine; cholesterine was formerly held to be an abundant normal constituent of the bile. It would appear that cholesterine is formed in the gall bladder and in the bile as an emulsion, so to speak.

Bilirubine calcium is an insoluble compound, the outgrowth of the union of bilirubine and the lime salts. The bile salts, sodium glycocholate and taurocholate, prevent this union naturally, even in the presence of a moderate excess of lime, but if an abundance of lime is added a precipitate of bilirubine calcium results. If to a weak ammoniacal solution of bilirubine there is added a few drops of lime water an immediate precipitate of bilirubine calcium takes place. If now to this same solution $2\frac{1}{2}$ per cent of gly-

cocholate of soda be added it takes five times the quantity of lime water to cause any precipitate at all. This experiment has an important bearing in a prophylactic way. Albumen favors the precipitation of bilirubine calcium. The outpouring of a catarrhal change in a mucous membrane is largely albuminous.

A gastro-duodenitis may lead to the stagnation of bile and thus act as one of the prime factors in the precipitation of this fluid abnormally, but is not alone sufficient, for as long as no septic micro-organisms are present the disposition of the bile is to hold the stone-producing ingredients suspended or in solution. The bacillus coli communis is often the cause of catarrhal changes in biliary passages. Naunyn found that if he injected the colon bacillus into the gall bladder it excited no inflammation, but if the common duct was previously ligated the most intense cholecystitis was excited.

An infection of the gall bladder gives rise to an increase in the amount of cholesterine by destruction of and disintegration of the epithelia cells, and to a precipitation of bilirubine calcium; the latter acts as a nucleus for most stones.

The attacks of cholangitis may be of a transient character and yet leave the nuclei of many stones in the gall bladder. These may or may not give rise to any symptoms directly attributable to their presence. Yet the presence of a stone or stones in the gall bladder may produce an influence on the general health of the individual that may become of a serious character. The all-important subject of diagnosis in this pathology finds its greatest appreciation. Early diagnosis in many cases means prophylaxis. Obstructive jaundice, hepatic colic and ptomain poisoning are usually late manifestations.

If in 10 per cent of all post-mortems there are found gall stones that were not suspected during life, owing to absence of symptoms of a severe nature, I am sure a close enquiry would in some of these cases have elicited a history of "bilious attack" recurring headaches, a sense of uneasiness in the gall bladder region, loss of weight, etc. If no infection exist when stones are in the gall bladder their presence does not excite much pain, but let a stone become lodged in the common duct, then a paroxysm, known as hepatic colic, will be likely to supervene.

Probably only two-thirds of the patients with gall stones ever have severe colic symptoms, but it must be remembered that it is not the pain that kills in these cases.

Spasmodic closure of the pylorus may be mistaken for hepatic colic, but with a recognition of the accompanying gastric dilatation and hyperacidity of those cases, a diagnosis can usually be made.

It is not necessary that suppuration exist in order to have rigors and fever, the so-called "hepatic intermittents," of Osler. These irregular chills are due to the absorption of ptomaines. When the stones are located in the common duct near its entrance into the duodenum, absorption is especially liable to take place, for it is at this point that the lymphatics abound most plentifully.

A small round stone will frequently become lodged just at this point and make for itself a bed in the mucous membrane by destroying the epithelium, thereby opening the avenues of lymphatic absorption. A stone in this location may remain for an indefinite period, giving rise to symptoms of a mild or severe character depending on its disposition to become wedged into the ducts and with the completeness of this closure. These ball-valve stones are the most persistent in duration, the greatest in danger, the most difficult to cope with surgically. A stone lodged at this point and remaining for months or years is a most dangerous foe to the sufferer. Dangerous from the persistence of its health undermining properties, in a mild and gradual way (chronic sepsis and persistent mild cholaemia) and from the remote danger of a cancerous development at a site of constant irritation. Where the obstruction is complete the ducts and gall bladder becomes greatly distended with the bile and other normal and abnormal fluids. The lymphatics taking up the coloring matter distribute it through the blood channels to the whole mucous and cutaneous surfaces, and thus jaundice is produced. A remarkable change takes place in the gall bladder in some of these cases, in which the common duct is occluded; that is, the bladder becomes contracted instead of dilated; this is in part explained by the action of Heister's valve and in part to the often present pericholangitis. A persistent and complete closure of the ductus communis choledochus, frequently leads to a cirrhosis of liver. The choledochus stones are found in about 10 to 15 per cent of all cases presenting marked symptoms. Thornton (1884) was the first to remove a stone from the common duct, since which time the operation has been performed by many surgeons all over the world. Within the last five years the clinical histories of cases

have been carefully studied with the purpose of making early and correct diagnoses; this has lead to an analysis of the symptoms, making it possible to differentiate the stones in the gall bladder from those in the common duct.

It must be remembered that the weight of gall stones is very light, 1020 to 1030, while the specific gravity of the bile is only 1030. A ball-valve stone may float about in a dilated duct, thus changing its position easily. This, in part, explains the sudden cessation of the pain in some cases of colic, even though the stone does not escape into the duodenum. A change in the position of the patient's body may cause a dislodgment of a light stone, provided the stone is not partially imbedded in the surrounding structures. The function of gall bladders is not that of a reservoir for the bile, as it holds but an ounce and a half, while the twenty-four hours' supply of this secretion is about 40 ounces. Someone has advanced the theory that the gall bladder is like the expansion tank on the locomotive. Keep up the tension and thus regulate the flow of bile. I believe the gall bladder has some special function. Most likely a digestive ferment is manufactured here in the quiescent stage of the liver. The gall bladder has been removed (Von Langenbeck, 1882) successfully several times, but so far no scientific clinical data are available bearing on the progress of these cases, post-operative. Such would be of great interest both to the physiologist and the surgeon. Upon a proper diagnosis depends the correct management of these cases. I am sure were the obscure symptoms presented by many chronic invalids, interpreted correctly, that a goodly number of the cases would prove to be cholelithiasis. Many a swarthy (icteric tinge) skinned patient with a loss of weight and with an interference with digestion and proper assimilation, I believe, will be found to have gall stones stored away in the bile passages, and that their presence there has interfered with the formation of some special digestive agent, or has given rise to the development of noxious substances which have gradually undermined the health's standard.

It must be remembered that while jaundice is an indication for surgery, that at the same time it forms a serious bar to surgery, as these chronic cholemic patients are almost, without exception, bleeders, and they stand surgery and anaesthetics very badly. All arguments favor early surgery where symptoms point to the necessity of surgery at all. The treatment of these cases depends

upon the symptoms manifested. An ordinary attack of hepatic colic, due to the passage of a small stone, will in all probability terminate favorably within a few hours or days, and if the stone was the only one present and succeeded in finding its way into the duodenum, the case will require no farther care.

If the case is one with well-marked ball-valve symptoms, in all likelihood the stone will remain in the duct, giving rise to painful and dangerous symptoms until its surgical removal is effected.

If the stones are in the gall bladder, and are giving rise to infection or suppuration in this viscus, then surgery should be early resorted to. It is rare that pain alone as a persistent symptom forms an operative indication, yet frequent exacerbations of pain with the usual attendant symptom of jaundice may demand speedy surgery.

In a paper to be read in one evening the whole scope of gall stone pathology and surgery cannot be covered, hence I shall not enter into the technical details of the various procedures resorted to by the surgeon in these cases.

The mortality in skilled hands is very low. The surgery is difficult and requires careful anatomical discrimination, a familiarity with the pathology and exact surgical acumen. If these essential prerequisites are not possessed by the operator, his work will be a species of blind groping in the dark, accompanied by two dangerous guides—surgical opacity and faulty technique, in whose wake will follow imperfect results and high mortality.

DEDUCTIONS.

1. Cholelithiasis is of frequent occurrence and usually gives rise to manifest symptoms, either severe or obscure.

2. Cholesterine as a gall stone producing agent, must be present in an abnormal quantity.

3. Cholesterine is in a great measure a product resulting from the destruction and disintegration of the epithelium of biliary ducts and gall bladder.

4. Bilirubine Calcium, an insoluble compound, the outgrowth of the union of bilirubine and the lime salts, forms the nucleus of most all the stones formed in the ducts and the majority of those formed in gall bladders.

5. Jaundice, ptomain poisoning and suppuration are late symptoms of cholelithiasis.

6. Dyspeptic symptoms, swarthy skin, uneasiness in region of gall bladder (congestion of liver) and loss of weight are some of the remote and local outgrowths of the presence of gall stones.

7. Inflammatory diseases of the duodenum and bile passages are the most direct causative factors in the production of gall stones.

8. Some cases get well without any assistance from the physician or surgeon, yet the progress of the cases that terminate favorably without surgery, can be greatly assisted by the physician.

9. The surgery is especially difficult and the inexperienced should not undertake to do it.

10. A ball valve stone usually continues giving rise to symptoms until removed by surgery.

11. Stones in gall bladder producing septic symptoms should be removed.

THE CORRELATION OF SEXUAL FUNCTION WITH INSANITY AND CRIME.*

H. MACNAUGHTON-JONES, M.D., M.A.O.Mch.

It is customary for the outgoing President to make a few observations on some topic of gynecological interest before leaving the chair. I am influenced in the selection of the subject I am about to bring before you by the feeling that the operative side of gynecology has been so frequently before us of late, that we may well divert our attention to a brief consideration of a gynecological matter of interest which has nothing to say to operative methods and technique. I refer to the correlation existing between the discharge of sexual function in women, mental alienation, and criminal acts, as also to the bearings of gynecological knowledge on a few important questions in forensic medicine. Here I must premise that our knowledge of the phenomena that correlate the functional activity or abeyance of action of the female sexual organs, with either transitory or permanent psychological consequences, especially those of a morbid nature, is not sufficiently definite to enable us to draw very accurate conclusions,

*Valedictory Address delivered to the British Gynæcological Society,

or to formulate precise axioms, on which we can found principles of practice. On the other hand, experiences have been accumulating which offer most valuable suggestions in regard to the attitude which has to be taken to women at certain periods of their active sexual life, and which also help us by throwing a side-light on the many reflected nervous disturbances in organs remote from the sexual centre.

We may thus, not without profit, reflect on these points:—How far does the process of menstruation, including in that term the physiological changes that take place in the ovaries and Fallopian tubes, as well as those which, either associated with, or apart from, these, occur in the uterus, affect a woman, by originating morbid impulses in the various groups of her pelvic nerves which find their response in reflected neuroses in other organs, and thus influence the coherence and stability of her mental acts? Or again, in what directions, and to what extent, does the normal fulfilment of ovulation with menstruation develop for the time being erotic impulses, encourage the state of neurosis generally, or so lower both the psychical and physical inhibitory control as to lead to a hyper-exaltation of the nervous system with increased susceptibility to slight irritations (from whatever source they may arise), and a weakened will control that permits of distorted mental visions and erratic moral acts, vulgarly called crimes, which the woman is helpless to evade or to subdue?

In order to see to what extent this is true, we have to inquire whether there be evidence that menstruation, both normal and abnormal, does so influence the woman, and under what condition it is most likely so to do. The second division of the subject brings us to a very different question, and that is, how far disease of the sexual organs in women is correlated with symptoms of alienation, from slight interferences with their mental equilibrium to more profound disturbances such as melancholia, dementia, or mania. This investigation naturally leads to the further inquiry, how far removal of the diseased organs by operation is salutary or otherwise to the woman, and to what extent the operation in itself may mitigate or increase the mental trouble.

There are incidental matters connected with anomalies in the formation of the genitalia in women which have a bearing both on gynecology and psychology, and which have also to be considered in looking at a case from the point of view of a student of forensic

medicine. Lastly, there are a few questions of grave import in the elucidation of criminal acts, in the fixing of indisputable guilt, or in the protection of the innocent. Here, again, gynecologists are brought into close touch with medico-jurists, and the responsibility is a grave one, for there are certain pathological points that the expert gynecologist is the most fitting person to give a decisive opinion on.

Before speaking on the questions to which I have referred, there are, it is necessary to remind you, two lines of thought which we should follow in approaching the question of sexual function in the rôle of insanity or crime. In the first place, we now know the intensity of the physiological function discharged not only by the ovaries, but by the Fallopian tubes and uterus, before a menstrual act is completed.

In healthy women there is a cycle of changes, in the round of which we have a series of nutritive processes, elaborated through the healthful inter-change of function on the side of the circulatory current on the one hand, and the tissues and nerve-elements on the other. These processes cause alterations in the circulation of the Fallopian tubes, and the quantity of blood that they contain; the extraordinary changes which take place during ovulation in the ovary, resulting not only in the maturation and bursting of the follicle, but in a general enlargement of the organ and increase in the size of its blood-vessels; these phenomena being associated with, and followed by, equally marked changes in the uterine endometrium, and, in fact, in the entire uterus. All these alterations occur with a periodicity, and with such slight outward evidences of their progress and completion, that there is no other physiological process of equal magnitude attended by such important pathological changes as those of ovulation, and yet so slight an apparent constitutional systemic disturbance.

Also, we must remember that ovulation occurs independently of menstruation, and *vice versa*, and that even rythmical menstruation may occur without ovulation; Pflüger adopts the theory of a dynamic equilibrium of all the organs, from which it follows that the ovaries carry daily a definite number of stimuli to the central nervous system. At any rate, it is certain that the process of ovulation may go on quite independently of menstruation, and that, in fact, a period of about two days generally intervenes between the bursting of a follicle and the latter.

During all these changes in the genitalia there is a co-existing excitation of the ovarian nerve, causing reflex excitations in the uterine arteries, and, as Rohrig says, such ganglionic and nerve excitations proceed through duly provided paths.*

Experiments have shown how important is the effect of the secretion of the ovarian gland on the entire economy, and its normal metabolism. It would seem from the experiments of Curatullo and Taralli,† that, if it be suppressed, the elimination of phosphorus is diminished, as also the respiratory changes are seriously influenced, while, owing possibly to a faulty metabolism, the body weight is increased. How great an effect the ovaries must have on metabolic phenomena, is, perhaps, best shown by the cure of osteo-malacia by oöphorectomy, an affection which Fehling has attributed to exalted ovarian functional activity and consequent reflex effects on the vasodilators and constrictors of the medulla.‡. The disease is, according to him, a reflex tropho-neurosis of the skeleton, having its focus of reflection in the ovary. Schauta and Mary Dixon Jones§ have also recorded cases of cure of osteo-malacia by removing the ovaries, and the physiological effects of the constant pouring into the system of this secretion, is, according to Fehling, increased oxidation of organic phosphorised bodies, as well as hydrates of the carbon and of fats. If, therefore, the ovaries are removed, or if their function is in abeyance, organic phosphorus is retained, and there be an increase in the calcareous salts in the skeleton. To follow up the various bearings of these physiological effects of ovulation, and the ovarian secretion, either through undue activity or diminution in quantity, would in itself occupy all the time at my disposal. Even the little knowledge we possess of the powerful effects of the unstable phosphorus compounds of the protagon and lecithin series on metabolism throughout the entire body, but more especially on cerebral, cerebro-spinal, and sexual impulses and excitations, is sufficient to indicate how great must be the influence of a secretion like that of the ovary on the whole nervous system, from the

*Paul Strassman, on ovulation. *Archiv. f. Gynaek.* Bd. 52, chapter i., 1896. See summary by J. Taylor and F. Edge. *British Gynecological Journal*, p. 2, vol. XII.

†*Annali di Obstetriga Ginecologia*, October, 1896.

‡*Brit. Gyn. Jour.*, February, 1897.

§Oöphorectomy in Diseases of the Nervous System, Brooklyn, N. Y., Mary Dixon Jones.

parts involved in the excitation of lower and higher reflexes to those portions of the brain cortex in its anterior lobes, which have, as Clouston says, "mentalisation as their function, and which are unquestionably the examples of the highest evolution of organised matter to be found in nature, the fullest of hereditary qualities, the most powerful, yet the most unstable, and by far the most physiologically valuable, part of man—the vehicle of the goodness of the saint and the badness of the criminal." Curious fact for reflection, that, as Hinton long since pointed out, where all this evolution of thought and will exists, there is no textural scaffolding, instability of structure having for its counterpart instability of organic material, and ever fleeting, changing, and mystic mentalisation, acknowledging no definite or stable scheme for its elaboration of the mandates that it issues.

Also worthy of reflection is the fact, that while in the organs endowed with the highest vitality for sexual function, and on the parts concerned in generation and the propagation of the species, we find this instability of organic constitution in the male and female secretion, so do we find the same organic instability in the constitution of the highest centres in which reside thought and will.

"There is no doubt," says Claye Shaw,* "that the sexual is an innate faculty of the brain, stronger in some than in others, and one whose existence is possible without any correspondence of external organs." If this be true, then how much of sexual crime has its origin in defective or abnormal mental organisation?

This brings us to the recognition of all that mass of work which has been done of recent years, and which has served to prove that physical configuration, deviations from the normal physical type, evidences of defective evolution in the growing youth, combined with the legion of hereditary transmissions in which we have defective evolution, physical and mental, exist in one direction, while concurrently there appears to be an excessive, distorted, or diminished hyper-development of certain traits and configurations in the other.

If the researches of the school of Lombroso and his workers be true, and that physical configuration, not only in the higher centres of nerve structure, but in correlated physical deviations

*On Insanity with Sexual Complications, by Claye Shaw, M.D., St. Barts. Hos. Reports. Vol. XXII.

from the normal type, are indications of perversion in the moral and mental attributes of the person exhibiting them, how likely is it to be equally true that anomalies in development, and structural strayings from the normal type, as well as pathological changes occurring in the sexual organs of a woman (organs from which emanate impulses and excitations, stirring the deepest depths of her moral nature), have a direct relationship to those motives and actions which we so flippantly embrace under the head of "criminal." If one of our duties as gynecologists be to study the correlations that exist between the correct discharge of functions on the part of women's sexual organs, and the various morbid impulses set in motion, both physical and mental, arising from congenital or acquired histological and pathological changes in her sexual organism, including the many paths of sexual expression and impression involved by these, then, surely, gynecologists are brought into the closest relationship with the springs of action which must throw light on criminal motives and criminal deeds.

"If," says Clouston,* "we take the twelve years between thirteen and twenty-five as the average period of adolescence, it is in the latter six that most criminals develop into that condition. The maximum of criminality falls after 25. By far the greater part of the habitual criminals become so in fact before the moral inhibitory faculties have attained full physiological perfection." And he goes on to say, "There is one kind of temptations then strongest, and these are connected with the sexual nusus." It is at this age of life, as he insists, that criminals become so, while there is lack of development in their cerebral qualities, their intellectual and their reasoning powers. This deficiency is associated in those centres, where, while in their highest form of development, we have instability in function and an apparent lack of textural homogeneity, there is still that mystic yet harmonious union of mental impulse with moral inhibition,

"Each with each in order blending,
Each on each in turn depending."

that marks the moral and mental stability of the man or woman.

I have to abandon all idea of statistics in a short paper like this,

*The Developmental Aspects of Criminal Anthropology, by T. S. Clouston, M.D., p. 221.

and must be satisfied with referring to certain proved and established facts which bear on the relationship that exists between anomalies of development and pathological changes in the sexual organs of women, and perverted mental and moral impulses.

In the first place, we find such minor troubles present in a large proportion of women who have pathological changes in the uterus or adnexa, associated or not with congenital irregularities or deformities in conformation, as aggravated headache, sense of distention in the head, interferences with memory, facial neuralgia, migraine, ocular and laryngeal, with aural vertigo and tinnitus, symptoms of hyperæsthesia or anaesthesia of the extremities, spinal irritation, true hysteria, insomnia, anosmia or perversions of smell, general neurasthenic conditions, as agorophobia, œsophageal spasm, gastralgia, and such a neurosis of the coccygeal nerves as painful sitting. Disturbances of the pneumo-gastric and splanchnic nerves are shown by gastralgia, with various dyspeptic symptoms, while the disturbance of the nerve control of cardiac rhythm find its expression in intermittent or exaggerated action of the heart and dyspnœa. Such conditions we may class under the general head of visceral and various reflected neuroses, which owe their origin to perverted impulses starting from abnormal or diseased states of the genital organs.

Graver consequences are noticed in epilepsy and hysterio-epilepsy, in melancholia, suicidal insanity, and dementia. Picqué found a proportion of 88 per cent of gynecological affections amongst the insane, and others have found them in even higher proportion than this. He arranged his statistics from 66 cases, according as the disease of the brain developed contemporaneously with that of the womb, those with serious genital affections, where operation had but a comparative success, and those whom operation benefited, hastening their recovery. There was definite cure in eleven cases.

With A. T. Hobbs, we can hardly doubt that constant irritation of the lower nerve centres, incidental to local disease, must react upon the higher centres, and the effects recorded by several observers have to be given due weight in the consideration of the question as to whether insanity has been cured by the ovarian secretion. I have had some valuable evidence from Christopher Martin in the same direction, and Arthur Wilcox has treated several cases of insanity by the administration of ovarian extracts. In

cases of suppressed menstruation, in which this was given, distinct recovery took place from such conditions as melancholia and mania. It was not so successful in epilepsy. Jacobs, of Brussels, has reported similar cases. Hobbs found that one-sixth of the females in the Ontario Asylum suffered from diseases of the generative organs. Of 110 cases operated upon, 65 were either completely restored (36) or improved by operation (29), and the cases published by Holmes, of Chatham (Ontario); Burgess, of the Protestant Hospital for the Insane at Montreal, and many other writers, establish the fact of the correlation that exists between diseases of the pelvic viscera in women and insanity. If we look at the nature of the affection most likely to produce mental disturbance, we find it most common in disorders of menstruation, which of course may have as their cause various pathological conditions. With amenorrhoea and dysmenorrhoea we frequently find abnormal congenital configuration of the uterus and affections of the ovaries and Fallopian tubes. The affection of the ovarian nerves which Mary Dixon Jones has so accurately described as "gyroma," she has demonstrated to be present in many cases of epilepsy, and also that the removal of the diseased ovaries effected a cure in several cases, not only of epilepsy but of osteomalacia. There are instances on record in which tubercle, carcinoma, and endothelioma were present in the removed organs, and, while time does not allow any lengthy reference to a record of cases, the names of the writers are sufficient guarantee in themselves of the reliability of their facts. They have shown that insanity and ovarian disease not only do frequently exist side by side, but that removal of the offending organ relieves the mental condition. Boldt, Felding, Goodell, Beatty, T. G. Thomas, Marion Sims, and Lawson Tait were amongst the earliest workers in this field. Still, the difficulty exists of establishing the causal relationship between uterine and adnexal disease and insanity as one of cause and effect.

*Kraft-Ebbing has entered into a full investigation of the medico-legal relations of disordered menstruation, and he lays down the proposition that in any medico-legal investigation, not only should the mental condition of the woman during her menstrual period be closely investigated and the concurrency of

**British Gynecological Journal*, May 1898.

menstruation with the act imputed be noted, but the previous history of her mental attitude during menstruation should be inquired into, and if it be found that menstruation has, as a rule, a decided effect on the ideation of the woman, or that the catamenial epoch be associated with mental disturbance and acts of an impulsive character, these facts should be taken into consideration as extenuating circumstances or the proof of irresponsibility. All evidence goes to prove that the appearance of the catamenia has, in a large number of the mentally afflicted, an important effect on their condition. This, of course, is more manifest in the disorders of the menopause, in which nervous excitations and psychic disturbances, with various hysteroneuroses, occur; and we know that, in addition to the ordinary histological changes in the ovaries and Fallopian tubes which take place at the climacteric, there are also at this period frequent pathological changes both in the adnexa and the uterus.

A most valuable paper touching on this subject, on "Insanity with Sexual Complications" (Bartholomew's Hospital Reports, Vol. XXII.), has been written by Claye Shaw, and is well worth perusal by every gynecologist. He rightly dwells on the dual nature of sexual delusions—those that are purely mental, without relation to the sexual organs, and those which have their origin in the latter. He also points out how dangerous it may be at certain times to excite further reflex activity and stimulate those centres, even though there be a correlation between the insanity and the sexual centres of the cord. There may be, he says, uterine or ovarian disease without insanity, or a sexual form of insanity without disease of the genitalia, or, thirdly, insanity may exist and no sexual delusions. The great difficulty lies in establishing the cause or effect of sexual disorder and the insanity. It is clear that the mere fact of sexual acts or delusions being present is totally insufficient to do this, and the whole of Claye Shaw's arguments go to prove how difficult, if not well-nigh impossible, it is to establish such cause or relationship. Referring to a case in which there were recurrent exacerbations of insanity during the catamenia, the patient being rational on most subjects in the intervals, though of an erotic nature, he says:—"I think that the operation of oöphorectomy would have much relieved her symptoms, at any rate the violent ones; but of this I could not be sufficiently sure to be able to recommend it. . . . In an acute stage of violent

insanity, anything like a serious operation, is out of the question, and there is always the probability of acute symptoms coming on after an operation, preventing the rest which is so indispensable. I think that this was just such a case in which an examination in the middle of the interval would have been justifiable, and if diseased adnexa were found, oöhoectomy performed; not otherwise." Seeing the mass of intellectually sound women who suffer from disease of the sexual organs, I think Claye Shaw's conclusion, that true sexual or uterine and ovarian insanity is by no means common, is a correct one; but on the other hand, this does not invalidate the soundness of the proposition, that a differential diagnosis of insanity in women, and the presence of disease of their sexual organs, has to be carefully considered as a primal or sustaining cause of the mental condition.

The expediency of justification for the examination of any insane woman will not depend upon the answer to the question, whether her insanity is sexual or otherwise, but whether this gyneco-psychological attitude be correct, that the primary cause of the alienation may rest in a pelvic disorder, which it is the duty of those who have her in charge to discover. Claye Shaw speaks highly of the effect of wet cupping over the loins in cases of epileptiform insanity occurring at the time of the catamenia. It has the advantage of directing the patient's attention from, and not to her, sexual organs.

Climacteric insanity occurs both in men and women, but, as Clouston has shown by his statistics, in a much larger proportion of women, 196 to 32 out of 228 cases. The ten years from 40 to 50 are the ones he regards as most favorable to the development of the insanity. It is, he says, a sub-acute psychosis, as mania is not nearly so common as melancholia, and suicidal impulse occurred in fully 50 per cent of the cases, an important practical point being that such suicidal impulse is difficult to prognose so far as the intensity of the suicidal desire, and that such patients have to be always surrounded by every care and precaution against the impulse.

It is interesting to note the changes in senile ovaries when alluding to that form of insanity Clouston refers to as ovarian, which occur in old maids, the combined effects of an unprepossessing appearance, with a too great devotion to religious exercises, "severely virtuous in thought, word, and deed,"

in whom nature, just before or after the climacteric, takes revenge for too absolute a repression of all the manifestations of sex."

Otroschkevitch has shown that in old age the epithelium covering disappears from the surface of the ovaries, there is desiccation of mature, and wholesale degeneration of the primordial, follicles, attended by hyaline degeneration of the arteries and the fibrous tissue, and finally fatty degeneration of the cellular tissue. Here we must have a corresponding decrease in the ovarian secretion.

This is a case in point. A lady, unmarried, and passing through the climacteric, was brought to me for the removal of a comparatively small uterine polypus. For some time her manner had altered toward her relatives, and she was more taciturn and morose, but there had been no direct evidence of any marked mental alienation. I determined to remove the polypus, but was so struck with the manner of patient, that in placing her in the Medical Home I asked the Superintendent to obtain a special mental nurse to look after her. The next morning she was taking her breakfast, nothing whatever having occurred in the meantime to excite suspicion, and while the nurse was placing something outside the bedroom door, having foolishly allowed a knife on the tray, the patient cut her throat in two places, fortunately not fatally. I subsequently removed the growth in an asylum, but I am not aware that she ever recovered her sanity.

To show how persistent and obscure, with long intervals of suspension, these climacteric impulses may be, I may mention the case of a lady sent to me by the late Dr. Hack Tuke, who had prolapse of the uterus, with attendant bladder symptoms. She suffered at times from marital delusions and attacks of melancholia. The prolapse was cured, and the patient relieved. She was supposed to have completely recovered, but some years later, without any warning, in a fit of depression she committed suicide by drowning.

Clouston places under a separate heading "hysterical" insanity, an insanity engrafted on hysteria, and groups under this a distinct class of symptoms, such as incessant talking, sexual and erotic ideas, imaginary ailments, craving for notice, habits of masturbation. He says such cases form 50 per cent of insane females.

I am not referring tonight to puerperal insanity, further than to say that in considering the etiology of this affection, various workers have shown that both in uterine lesions which have ex-

isted previous to labor, and other affections of pregnancy, we have ante-partum warnings of the predisposing causes of this affection, while in lesions occurring during labor, such as severe laceration of the cervix, not treated immediately and rectified, we have the exciting causes of the puerperal mania. The insanity of pregnancy Clouston regards as comparatively rare, occurring in women advanced in life when becoming pregnant, and usually of a melancholic and suicidal character. Sixty per cent of such cases, Clouston says, recover at child-birth.

There is an important bearing on these latter cases, as indeed, on all cases of insanity in women, and that is the hereditary alcoholic tendency and proneness to alcoholic nerve degenerations and dipsomania.

How far menstruation epilepsy, and insanity, are correlated, may be still further deduced from the observations by Sutherland in Hack Tuke's "Dictionary of Psychological Medicine." Briefly, they are as follows:—Esquirol has computed that the disorders of menstruation form one-sixth of the physical causes of insanity, and in this conclusion Morel coincides. In epileptic insanity the catamenia had a marked influence on the fits, increasing these in number or intensity. Menstruation had a like effect in producing exacerbations of excitement in mania, while in sufferers from melancholia, amenorrhoea was frequently present. General paralysis appears to induce an early climacteric, and further, the curious fact is recorded that in a few aged insane women, the catamenia reappear after prolonged cessation. It is worthy of notice that in dementia menstruation does not appear to be affected, and all the evidence points in the direction that there is a delay in the appearance of the menstrual act in imbeciles, idiots, and cretins.

I have recently had two patients, sisters, both of whom developed symptoms of insanity. In one it assumed the form of dislike to the parents and delusions regarding them, as well as a suicidal tendency. The first attack occurred with suppression of the catamenia. She quite recovered from this. With a second stoppage of the periods she became the victim of religious delusions. Again, with the re-establishment of the catamenia, she has perfectly recovered. The other sister with the onset of each menstrual period grew excitable, and incoherent, and took sudden violent dislikes even of her parents. This mental derangement passed off about a week after the termination of her rather scanty

flow. Gradually approaching her next epoch it recurred. She is now perfectly well, and her uterine functions are healthy.

Clouston well sums up the class of symptoms we meet with in patients of this stamp. I may summarise them as follows:—Stupidity and lethargy in some, lack of interest in duty, an anti-social tendency, causeless aversion to relatives, intolerance of control, incompatibility of temper, impracticable visionary scheming and want of common sense; sudden development of unaccountable immorality, or perverted sexual and reproductive train of thought. Unfortunately, as the writer says, such patients, who really require to be placed in the hands of a doctor, too often find their way into the arms of a policeman.

I have myself recorded two cases which, as far as I know, are unique, of trophic disturbance associated with menstruation. One, which I brought before this Society (1896), of deep discoloration and pigmentation of the entire side of the face, complicated occasionally with extensive ecchymosis of the cellular tissue of the orbit, in a case of violent dysmenorrhoea, and coming on with the catamenia. The other, which I read elsewhere, and to which I gave the name of “*esthiomenic menstrual ulcer*” of the nose, in which the most serious trophic disturbances, resulting in a form of corroding ulcer of the nose and lip, recurred with each menstrual period, and began with amenorrhoea. The full particulars of the case I refer to were in the *Edinburgh Medical Journal*, 1898. Curiously enough, a sister in the same family was subsequently troubled in like manner.

*Hack Tuke, in writing on marriage and insanity, notices what he evidently regarded as a perversion of feeling, in which young persons of both sexes suffer during a protracted engagement from a revulsion of feeling, and an antipathy is engendered which may lead to a rupture and its legal consequences. Of course, there is one powerful factor in both men and women, which, especially during the development of adolescence, has a strong collateral influence in producing and maintaining erotic desires, impulses, and delusional insanity. Of this I have myself known some marked instances. I allude to the practice of masturbation. Not only has this habit a predisposing influence in the direction of such morbid

emotions or delusions, but in many cases it plays a principal part in the production of the epilepsy of puberty.

Keith, out of 64 hysterectomies, had six cases of insanity. I can speak from personal knowledge, having had many consultations with him in cases of mental trouble associated with disordered sexual functions, as to how the late Hack Tuke regarded this question. He recognised fully the coincidence of disordered menstruation and disturbance of the mental functions, but was not greatly impressed with the value of a surgical operation on the insane, but, as he stated in the discussion which took place in this Society ten years since, he considered that the operation of oöphorectomy might be indicated in certain cases, and justifiably performed with benefit.

Savage, of Birmingham, had records of four cases of insanity out of 483 cases of oöphorectomy. Our distinguished Honorary President on the same occasion held that in cases of nervous derangement, in which disorder of the sexual functions is suspected, a close investigation as to the state of the sexual organs should be made. There can be no doubt that the view of Spencer Wells, speaking generally, was against operation in such cases. Dr. Savage, in this discussion in 1890, held that a relatively small amount of success followed examination of the pelvic organs of women. I have had, for the purposes of this address, an interesting letter from Dr. Blandford, whose long experience of the insane makes any opinion emanating from him of special value, and in that—for I have not here time to quote the entire communication—speaking from his 40 years of connection with the insane cases, the view is strongly upheld that uterine or ovarian disorders are not serious factors in the causation of insanity. He has never had a case of malignant uterine disease, and in only one patient a fibroid tumor, which was developed years after the insanity. He looks upon the cessation of the catamenia and amenorrhoea as rather a concomitant occurrence than as having anything to say to the causation of mental disease, and with regard to operations, he says that he has never known a patient cured by one, and has known insanity to follow in one case. He does not approve of subjecting a woman in a maniacal state to a vaginal examination.

I quote this opinion as expressing, on the part of an experienced alienist, the views of those who are strongly antagonistic to the more modern school, both of alienists and gynecologists, with re-

gard to this question. As one holding possibly what I might call a middle position, I refer to a communication I have had from Dr. Percy Smith, of Bethlem, who also took part in the discussion of 1890. His views are the same now as then. He considers that the number of women in asylums who are supposed to have reached them through diseases of the sexual organs is greatly exaggerated; and, further, that many of the cases which have been admitted to Bethlem Asylum had already been submitted to gynecological treatment for affections of the genitalia, and that the break-down had come during such treatment and after operation for the local disease. He thinks, in cases of recurrent insanity and where the disorder is most marked at each menstrual period, that while he has no experience of the effect of oöphorectomy, it is worthy of consideration in cases whose outbreaks of eroticism, excitement, or stupor, occur at each period, the patient being sane in the intervals; and the amenorrhoea which is present in acute mental disorders, he regards, in the greater number of cases, as a symptom of the general disorder, and does not believe that it demands a local examination. Nor does he in any way agree with the American suggestion that every woman admitted to an asylum should be examined, regardless of age or symptoms. "The gynecologist must not lose sight of the nervous system, nor the alienist of the pelvic organs."

Dr. Yellowlees, writing to me, says that gynecological operations for the cure of insanity are far from satisfactory in their results, and are not justifiable unless there be proof that there is local disease irrespective of insanity. I have seen insanity (not climacteric) complicating fibroma, displacements, and adnexal disease, but in every case the history disclosed a pre-existing predisposition to mental obliquity, or some distinct form of alienation.

Personally, I at present take the view that, in the great majority of cases in which there are gross lesions of the sexual organs present in insane women, and even where the lesion has preceded the insanity, there still has been pre-existent to the lesion what Robert Barnes well calls "an antecedent nervous condition as a predisposing factor."

I this year operated upon a young lady who had been previously confined in an asylum, and who subsequently had the operation of supra-vaginal hysterectomy performed. The latter step was taken for a fibroma of the uterus, and the adnexa of one side were

removed. The discharge from the cervix continuing, and treatment not availing, she consulted me for the affection of the cervix. On examination I found a most unhealthy cervix with a deep and bleeding erosion, and a rather profuse discharge. I removed the cervix, and she recovered perfectly from the operation. But the old symptoms of erotic mania returned, and it became necessary to remove her to an asylum, from which she has since been discharged as cured.

I operated upon another case—one of a lady who had held the office of superintendent in a private asylum, and from whom I removed two cystic ovaries. She previously had had curettage twice performed for endometritis and erosion of the uterus. She complained of constant agonising pain in the seat of the ovaries, and dysmenorrhoea. She was a typical specimen of the true neurasthenic and neurotic woman. Not until I had emphatic requests in writing from herself and relatives did I consent to operate, nor would I, I confess, be in a hurry to accede even under these conditions to such a proposal in a similar case. Twice she deliberately induced a hernia of the wound by her own acts, necessitating a third operation and forcible restraint afterwards to prevent a repetition of this, and then so admirably feigned a condition of dementia that not until the certificates for removal to an asylum were filled, which were really completed in order to test her malingering, did she return to a natural state of mind. This case, though an unenviable experience for me, may perhaps be a warning to others. Dr. Edge and Dr. Furneaux Jordan have each had two cases of post-operative insanity, all of acute mania. The operations were curettage, oöphorectomy: the diseases, cystoma and myoma.

One of our Fellows, Dr. Halliday Croom, has this year reported a case of acute mania occurring on the third day after simple ovariectomy, the patient dying on the sixth day, and also a second case of acute mania at each menstrual period, which he treated several years since by the removal of cystic ovaries, resulting in a permanent cure.

Elzholz, of Vienna, has reported a case of suicidal melancholia cured by vaginal pan-hysterectomy. In this case there was a bleeding myoma.

* (Vienna klin Wochenschrift, No. 29, 1898).

I have also, through Mr. Macnaul, notes of a case. A patient, aged 42, upon whom he operated in the Warwick Asylum, for ovarian tumors, suffered from melancholia, from which she passed into dementia. The case ended in complete recovery. He refers to two other instances of menstrual mania which were cured by pan-hysterectomy. In the one case four years, in the other two, have elapsed since the operation, and both have completely recovered. On the other hand, he also sends me notes of two cases, one of vaginal hysterectomy for chronic metritis and hemorrhagic endometritis, and the other a case of pan-hysterectomy for myoma, in both of which insanity followed the operation, one about a week and the other three weeks later.

Professor Japp Sinclair gives me the particulars of an interesting case of a lady who had been confined in the Cheatele Royal Asylum. She suffered from a bleeding fibro-myoma, and had been subjected to a long course of expectant and old womanly treatment for the same. Professor Sinclair performed hysterectomy, and though there was an anxious time after the operation, she never again had to return to the asylum, from which she had been temporarily removed for the purpose of operation. Dr. Ernest Hall reports another most interesting and instructive case. The patient suffered from intermittent melancholia for nearly three years, and came to be looked upon as a hopeless case in the London Asylum (Montreal). The adnexa, when examined, after she had been in the asylum from April, 1895, to January, 1898, were found diseased. Complete recovery followed on oöphorectomy.

Professor August Martin, of Berlin, on whose vast experience I thought it well to draw in writing this address, says that all his experience teaches him that healthy women do not run the risk of insanity from their sexual functions, nor are they endangered as to insanity by operations on their sexual organs. Still, if their mental condition at the time of the operation, or previously, be not a normal one, operations on the sexual organs induce mental instability or temporary insanity, the more so in proportion as their physical and mental state have been impaired prior to the operation.

Dr. Wood, of Hoxton, out of 11 cases admitted to the asylum within ten years, of women who suffered either from climacteric insanity, or in whom sexual disturbance was attributed as a cause,

shows that in one case melancholia had followed removal of the ovaries, in another it supervened after suppressed menstruation, and in another, a senile case, prolapsus uteri was present. There was one case of mania of pregnancy, one of the mania of puberty, and six of climacteric of insanity.

Up to 1890, Keith had six cases of insanity out of 64 hysterectomies, and Savage, of Birmingham, had records of four cases of insanity out of 489 cases of oöphorectomy.

Mary Dixon Jones, whose opinion, as that of unquestionably the foremost of living women gynecologists, is of value, and whose views with regard to epilepsy I have already quoted,* referring to oöphorectomy for *diseased* ovaries and tubes in the case of women so affected who are insane or mentally afflicted, having instanced some such cases, says:—"I would not remove healthy or normal ovaries for dysmenorrhoea or any suffering in the regions of the ovaries; I would not remove any save diseased adnexa for epilepsy, nor for mental or neurotic disease, even if I had failed after long trials of tentative measures, and had the cordial, full, and deliberate sanction of experienced practitioners."

George Rohé, of the Hospital for the Insane, Skyesville, who probably as much as any other living psychologist has studied the effects of operation on women in insanity, and, indeed, also in the case of males, comes to these conclusions with reference to post operative insanity, that while there is little difference in the two sexes between the number affected, the graver forms follow, in the majority of cases, operations upon the abdominal and pelvic organs in women.

Excluding cases of heredity, or acquired psychopathic predisposition, the mere removal of the ovaries would have, he thinks, no greater psychical effect than the removal of the arm or leg.

Confusional insanity is the form frequently found as post-operative, and both Dr. Rohé and Dr. Hurd, of Baltimore, who has written on post-operative insanity and undetected tendencies to mental disease, consider that the great majority of the cases are due to toxæmia from septic infection. "There is no ground for considering," says Dr. Hurd, "that the operation *per se* produces mental disease," and, so far as removal of the ovaries is concerned, a premature climacteric insanity may be developed, but this is due

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to the loss of the organs, and not to operation." The essential prerequisite for the development of post-operative insanity must be in all cases a neurotic organisation, predisposed, either from hereditary taint or from acquired nervous weakness, to take on diseased action in consequence of any disturbing influences. Operation should be discouraged in people of this constitution.

It was my intention to have referred to other matters in which gynecology is brought into close relationship with forensic medicine, and where it plays a most important part, as, for instance, in suspicions of chastity and the form and condition of the hymen; gonorrhoea, and the presence of the gonococcus in uterine discharges; and the whole question of scientific pathological evidence as regards wounds of the uterus, the condition of the endometrium, the presence and duration of the products of conception in utero, as well as the pathological differentiation of pregnant and non-pregnant changes in the ovaries. All these considerations seriously affect a correct decision in cases of attempted or produced abortion. Time, however, does not permit of this.

On the entire evidence before me I have come to these conclusions:—

(a) That the correlation of insanity and disordered sexual functions arising out of affections of the generative organs is a factor to be taken into serious consideration in the treatment of women mentally afflicted.

(b) That where there is ground for the suspicion that some abnormal condition of the uterus or adnexa exists which may produce or aggravate the mental affection, a careful examination, under an anæsthetic, if necessary, should be made.

(c) That in the investigation of criminal acts committed by women, either during the menopause or while the menstrual function is either active or suppressed, due weight should be given to the influence exerted by its irregularity or abeyance on the mind of the woman. In doing this, her previous history and temperament have to be considered.

(d) That the special dangers of the climacteric period and the symptoms indicative of threatening mania must be collected. The principal of these are moroseness and depression of spirits, attacks of hysteria, occasional hallucinations of sight and hearing, and especially of smell, suspicions with regard to relations, unjust dislikes, unfounded apprehensions of some great crime committed or

injury inflicted on them, suicidal tendencies. Here, again, examination of the pelvic viscera is called for.

(e) That in operations on the female generative organs there is a greater predisposition to mental disturbance than after other operative procedures—further, post-operative insanity is usually of a temporary nature.

(f) That women who have been previously insane are predisposed to a relapse by the development of disease in their sexual organs, and especially to temporary recurrence of insanity after operation on these organs.

Under all such conditions, and in the face of these warnings, the greatest supervision and care are required to anticipate the insane impulse, and to prevent suicide or crime in the case of women who manifest symptoms that may have their origin in disorders of the sexual organs.

A CASE OF PORRO'S OPERATION.*

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In presenting briefly the history and surgical procedure of the following case, the writer has reason to believe that there will be some pathologic conditions described rarely found.

Mrs. B., wife of a physician of this city, aged 34, married ten years, first pregnancy, family history good. Personally, Mrs. B. had always been a healthy woman; her menstruation has usually been irregular and scanty, but not accompanied with pain.

At about her fourth month of gestation I was requested by her husband to take charge of the case. I first visited the patient about the first of May, 1899, when she was supposed to be about five months and one-half in pregnancy. Upon examination I found nothing to indicate an abnormal condition, and, while I felt some uneasiness because the patient was rather small in stature, and also because of her age, yet, aside from these features, there seemed no reason to be alarmed. Mrs. B.'s gestation was in every way normal so far as could be observed, although no sub-

*Read at the Academy of Medicine, Kansas City, Mo., December, 1899.

sequent examination was made until about the first of August, when I was requested to visit her for severe pain referable to the right side. Her temperature was at this time 101° F. After a few days' rest in bed she seemed to fully recover. At this time the uterus was found to lie obliquely in the abdomen, the fundus in the right lumbar, and the cervix in the left inguinal regions. In any attempt to straighten the uterus to the normal axis the patient complained of much tenderness in the right side. Digital examination revealed the os-externum to be normal, and somewhat dilated, but the finger would not pass into the uterus. A breech presentation was diagnosed. Two or three examinations were made from this time till the middle of August, and at each time an attempt was made to reach the os-internum, but it seemed impossible to force the uterus into a position to permit the examining finger to reach this portion of the uterine canal.

About the middle of August I left the city on my summer vacation, to be absent three weeks, expecting that some other physician would be called in ere my return, as the period of normal gestation had already about expired. As soon as I returned I was informed that Mrs. B. had not been confined, and that she was quite comfortable, although very anxious. Feeling certain that the patient had gone beyond the normal period, there was occasion for much anxiety, and every day her condition was carefully noted. We had every reason to believe that the child was not alive after the first week in September, but there seemed to be nothing to do but to wait from day to day, so long as there were no systemic symptoms demanding immediate interference to bring about parturition. During this time the patient got somewhat weaker and occasionally had a temperature of 100° F., but was able to be about the house and take short walks out of doors. There were at no time any indication of rupture of the amniotic sac, but there was quite a profuse discharge of stringy mucus, sometimes streaked with blood.

On the evening of September 30th, the patient was anaesthetised, and I endeavored to bring on labor by means of dilating the cervix. It was at this time that I first located the internal os, and then only by means of pressing the fundus toward the centre of the abdomen and the lower portion of the uterus toward the vaginal outlet. By introducing a portion of the hand into the vagina the opening into the uterus could barely be felt, but it was

impossible to engage the fingers so as to dilate the cervix. I asked for consultation, and Dr. Mosher was immediately summoned. After assuring himself that the pelvis was normal in every way, by measuring with the pelvimeter, I again anaesthetised the patient and he attempted to do what I had failed to accomplish. After two hours of hard endeavor he gave up the effort and said the child could not be born by any natural method. Another physician was asked for and Dr. Halley came to our rescue. It required but a very few minutes to satisfy him that the child could not be born. It was then decided that a Caesarean section or a Porro operation should be done as soon as the patient could be properly prepared. The hour of this decision was two o'clock Sunday morning, and the operation was performed at nine-thirty o'clock on Monday morning. I was ably assisted in the operation by Drs. Mosher, Halley and Merriman, Dr. Merriman administering the anaesthesia. In incising the abdominal wall the uterus was cut slightly and presented such a diseased condition that we immediately decided that nothing but a Porro operation would avail, and the incision was extended so as to permit the uterus to be completely lifted out of the abdomen. When the fundus of the uterus was exposed we found the great omentum firmly adhered to the anterior and fundal portion of the uterus. The adhesions were so strong that it required much physical exertion to separate them. The adherent portion of the omentum was subsequently ligated and cut away to control the bleeding. When the uterus was amputated, quite a copious amount of material, resembling pus, escaped, causing us some anxiety, and necessitating thorough irrigation before closing the abdomen. The abdominal opening was closed without drainage and the patient placed in bed without any symptoms of shock. After the patient was properly cared for the uterus was opened, revealing entire absence of placenta, and the endometrium was a solid mass of gangrene. The foetus was doubled upon itself, the head lying almost in the groin and the breach presenting toward the cervix. The foetus weighed about ten pounds, and showed evidence of having been dead some weeks.

The patient made an uneventful recovery, temperature never going about one hundred, and most of the time was normal. The pedicle was not disturbed for eight days and never showed any sign of suppuration, neither was there at any time the least odor.

The *serre-noeud* was removed on the twelfth day, and the patient was discharged in three weeks and sat in a chair before the end of the fourth week.

The special points of interest in this case are: the absence of any history of rupture of the amniotic sac; the oblique and fixed position of the uterus, which prevented the possibility of uterine contraction (which leads me to say that there never were at any time symptoms of labor, except a constant aching in the back); the gangrenous condition of the endometrium involving the uterus itself to some extent, with entire destruction of the placenta, without markedly disturbing the patient's health; and lastly, the pleasing, and perhaps we may say, remarkable manner of her recovery.

One question presents itself in conclusion, which seems difficult to answer, namely, What could have caused such adhesions of the omentum to the uterus when the patient had never been sick a day (except as before mentioned), and had never received an injury which she could recall?

SOME REMARKS ON THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.*

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FIBROID tumors of the uterus are, unfortunately, of very frequent occurrence, and whilst on the one hand they may sometimes lead to but little trouble they may on the other seriously threaten life. Most often, however, they are a source of serious discomfort and ill-health without actually endangering life, and though in a considerable number of cases the symptoms which they give rise to can be relieved to a very remarkable extent by medicinal treatment, yet it not infrequently happens that the relief is only partial, and sometimes no real improvement follows even the prolonged use of drugs. The question of operative treatment therefore becomes an important one, and there can be no doubt that of all the operations devised for dealing with this condition, hysterectomy is the one that is most certain to give complete and perma-

*Read before the Medical Society of London, January 8, 1900.

nent relief. The chief factor which has kept this operation under has been the high mortality which has attended upon it, and even now by many it is regarded as one involving great risk. The sphere of usefulness of this operation would be greatly increased if it could be shown that the mortality from it need not necessarily any longer be a high one. The mortality of the operation for the removal of a uterus which is the seat of fibroid tumors is a matter, to my mind, of the utmost importance, because on the mortality of the operation turns the whole question of the indications for hysterectomy. So long as the mortality of the operation remained as high as 20 per cent it is obvious that it was impossible to advocate removal unless as a last resort, and the patient was well advised to put up with the troubles she had, rather than run the very considerable risk of losing her life which the operation exposed her to. It has often been insisted upon that fibroids seldom threaten life, but it is equally true that they often reduce the possessor of them to a condition of chronic invalidism, although after years of waiting the menopause may arrive and bring with it some measure of relief. If hysterectomy had no mortality, or if the mortality was very low, it is clear that the operation might be honestly recommended in cases where although life of the patient was not threatened, the health was so seriously affected as to lead to inability to perform the ordinary duties of life with pleasure or efficiency. To a poor woman who is in part or entirely dependent on her own exertions, long continued ill-health, resulting from excessive monthly losses of blood, is a serious matter, and the consequent inability to gain her livelihood renders waiting for the menopause an irksome or impossible task. Even among the well-to-do classes the loss of the best years of their life is hardly to be contemplated with equanimity, and if by a comparatively safe operation complete and permanent cure can be obtained, it is hardly fair to restrain them from seeking it. It is quite true that if the immediate risk to life from an operation is great it is better to wait rather than to run such a risk, so that the whole question of operative treatment turns on what that risk is.

The operation of abdominal hysterectomy will always be a formidable one, and often a difficult one, and one never to be undertaken lightly. A certain amount of shock is hardly to be avoided, and the opening up of connective tissue spaces will make blood poisoning easy unless sufficient precautions are taken. If,

however, the seriousness of the operation is fully realised and every precaution which modern science has shown to be essential is taken, the risks of this operation may be reduced almost to a vanishing point. The operation is often not simple and not easy, and if performed by those inexperienced in abdominal surgery or in unsuitable surroundings or without every antiseptic precaution it will still undoubtedly be attended by a disastrously high death-rate. In such an operation as hysterectomy the penalty of inattention to detail is heavier than in the simpler one of ovariectomy. It is not uncommon for operators to still talk of a mortality of 10 per cent as if it was a necessary evil which could not be avoided, but such a death-rate is a very terrible thing, and it is only when we realize the fact that there is no legitimate mortality in hysterectomy or any other operation that it will be reduced to within reasonable limits. An occasional accident will, I suppose, be always liable to occur, but apart from such a misfortune there should be, and I believe in time there will be, no mortality at all as the result of surgical operations.

If fatal cases are carefully studied, and they deserve study as much or more than those which are successful, the operator will generally be able to find out the reason in some fault of omission or commission, or if at a loss to do so he may with advantage seek the opinion of any experienced and candid friend who was present at the operation.

As to the relative advantages of the extra and sub-peritoneal treatment of the stump, the whole question again turns on the relative mortality of the two operations. Life is a more important consideration than any other, and if more patients live after the use of the serrenœud than after dropping back the stump into the abdomen no reasonable person would adopt any other method. It is for the advocates of the sub-peritoneal plan to show that their mortality is as low as that of the advocates of the older extra-peritoneal method, and it is on the question of mortality and on nothing else that either operation can claim to rise or fall. It is not necessary to show that the mortality of the sub-peritoneal method is lower than that obtained by the use of the serrenœud because the former possesses certain intrinsic advantages of its own, such as a more comfortable convalescence and a firmer abdominal scar. Personally, I am a strong advocate of the sub-peritoneal plan, and in my own experience the mortality from this

operation has been much less than that of the extra-peritoneal, and it has a further great advantage in that it is applicable to all cases. This is a very important point, because I do not think it can be said of any of the other radical operations for the removal of a fibroid uterus, such as pan-hysterectomy. Since September, 1895, I have employed this method in all cases of abdominal hysterectomy for fibroids, and during that time I have never had to fall back on oöphorectomy as a substitute. That is to say that in all cases where I set out with the object of performing an abdominal hysterectomy I have always been able to do it by this method. I cannot help thinking that those surgeons who habitually use the serrenoeud meet from time to time with cases, where, owing to the absence of any kind of pedicle, they content themselves with removing the ovaries instead of removing the uterus. In my series of 47 cases, which form the basis of my remarks this evening, there has been no selection; they represent the entire number of patients (both hospital and private) on whom I have operated for uterine fibroids during the last four-and-a-half years with the exception of three or four cases, where vaginal enucleation was practised for the removal of purely submucous tumors. During that period I have never done an oöphorectomy in a case of fibroids. In all the cases the uterus with the tumor or tumors was removed at the level of the os internum, and the stump after being dealt with in the ordinary way, was dropped back into the abdomen. Drainage was only employed in one occasion (Case 40), the details of which I shall narrate shortly.

Among those 47 cases there has been one death (Case 8), and the table shows a series of 39 consecutive cases of recovery, giving a total mortality of just over two per cent. My excuse for bringing forward this series of cases is that I hope to prove that abdominal hysterectomy, properly performed is not so dangerous an operation as it is generally thought to be, and further that the sub-peritoneal treatment of the stump gives as good, or I believe better, results than any other plan. At a meeting of the Obstetrical Society of London, held in November, 1897. Mr. Bland Sutton read a paper entitled, "On abdominal Hysterectomy for Myoma of the Uterus: with brief notes of 28 cases." In all these cases the sub-peritoneal plan of treating the stump was adopted. Two of the cases died, but he was able to show a series of 20 consecutive recoveries. Mr. Meredith, in the discussion

which followed, stated that the serrenoeud had given him 83 recoveries out of a succession of 90 abdominal hysterectomies (a mortality of 7.7 per cent) including a run of 30 cases without a fatality. He claimed at that time that these results had not as yet, as far as he knew, been equalled by the advocates of the sub-peritoneal method. As I have shown in my own series, these results, admirable as they are, cannot only be equalled, but can be surpassed by the sub-peritoneal method, and no doubt Mr. Sutton and others could now produce series of cases considerably longer than my own in support of the same view, though as far as I know, no such tables have been published in this country up to the present time. It is often said that the lessened mortality of today in such operation is due to the fact that it is done early, when the tumor does not reach higher than the navel. Although I certainly advocate the removal of tumors of this size under certain circumstances, I am sure that the operation is no easier than when the tumor is large and fills the abdomen, and this factor cannot be called into account for the small mortality. In fact, speaking broadly, the larger the tumor the easier it is to remove, and an easy operation means a shorter operation, and therefore a lessened amount of shock. The success of this operation depends on two things, and two things only, viz., strict cleanliness and complete control of bleeding vessels.

Indications for the Operation.—Even though the mortality of abdominal hysterectomy is reduced to two per cent or less, it is obvious that we cannot recommend such a form of treatment in all cases of uterine fibroids. At a rough estimate probably not more than 10 per cent of all cases of fibroids call for an operation such as this. Presuming for a moment that the mortality could be kept as low as this, even then it is not easy to lay down very definite rules as to the indications for operation. Large size, rapid growth, free hemorrhage, great pain, or serious pressure symptoms are obvious indications. Pain is not a very common symptom of fibroids, but if present is, in my experience, generally incapable of relief by drugs. In its most severe form it is generally due to one or other of the fibroids projecting into the uterine cavity, and exciting irregular and painful contractions of a labor-like character.

The condition of life and the character of the patient must be taken into consideration, as has already been mentioned, poor

women cannot afford to be partial invalids, and to some of those in easy circumstances ill-health is very irksome. To these, operation may be recommended, though the symptoms are not severe enough to justify one in urging it as a necessity. To some women, on the other hand, an operation presents so many terrors, that they prefer to remain as they are so long as their life is not actually threatened. In many cases all one can do is to point out to a patient that her choice lies between putting up with the symptoms she has got, or submitting to an operation, which is obviously not devoid of risk, but which, if successful, will result in a complete cure.

Tumors that fill the pelvis generally require removal sooner or later, and if they are already causing discomfort there is no object in waiting.

A question that is often useful to ask oneself is whether it is probable that the patient will be able to go through the rest of her menstrual life if nothing is done. If the answer is in the negative then there seems to be to be really no object in postponing what later will become an operation of necessity. For instance, a woman, aged 35, has a fibroid which reaches to the umbilicus, and is already the cause of some pain and a free monthly hemorrhage, and medicinal treatment gives but little relief. It is extremely improbable that she will be able to pass through the next 15 years of her life with even a reasonable amount of comfort, although the urgent need for an operation may not arise until she is 42 or 43. With great care she may be able to hold out till then, but during that time she will have to live the life of an invalid. As the mortality now stands, I think it is better to advise an immediate operation and thus avoid the loss of many years of activity. It is true, as already pointed out, that it is no safer, and no easier to remove a fibroid uterus at this stage than it will be when it is twice the size, and even the anaemia produced by the loss of blood does not, unless very extreme, appreciably increase the risk of operation. But it puts the patient back into the world again at five-and-thirty instead of at five-and-forty, when invalid habits may very probably have become confirmed.

To sum up, the lessened mortality of abdominal hysterectomy enables one not merely to save patients from death but to save them from invalidism. Any patient who is seriously incommoded by a fibroid which does not yield to treatment and is not suitable

for enucleation through the vagina, may fairly be advised to submit to an abdominal hysterectomy with sub-peritoneal treatment of the stump, provided the would-be operator has reduced his mortality to below five per cent. My own method of operating in these cases differs slightly from that employed by many others, and I therefore venture to describe the plan as now adopted by me, which I find applicable to all cases.

Various minor details have obtained a fictitious importance. Baer, for example, insisted that no ligature should be passed through uterine tissue, and attributes some of his success to this rule. Others have insisted on the importance of excising or sterilising the cervical mucous membrane. In the last 39 cases I have invariably ligatured uterine tissues, although the uterine arteries have been controlled by a separate ligature, and I have hardly ever excised or treated the cervical mucous membrane.

The plan of procedure has not been uniform because with increasing experience certain modifications have naturally crept in. In the last 30 or 40 cases the following plan has been adopted. After the peritoneal cavity is opened the tumor, when possible, is drawn out through the abdominal incision. If the broad ligaments are very short or the tumor is mainly intra-ligamentous and intra-pelvic, it sometimes happens that this cannot be done at this stage. Under any circumstances the first step in the operation is to ligature each round ligament about on a level with the os internum. The anterior flap of peritoneum is then marked out with a knife, and the round ligaments are divided on the uterine side of the ligature. This opens up the broad ligament, and with scissors the anterior layer may be divided, carrying the incision up towards the middle of the Fallopian tubes. The incision across the front of the tumor must be made sufficiently high to allow of the formation of a large anterior flap, and this flap is now stripped down with the fingers or the handle of a knife. The ovarian arteries and veins are next tied on each side by a ligature, which includes the Fallopian tube. This ligature, at any rate, on one side, should be tied so that at least one ovary is left, but if the fibroid occupies one broad ligament it is often more convenient to tie it on this side outside the corresponding ovary. Both ovaries should never be removed unless they are the seat of serious disease. Having tied the ovarian vessels on each side the broad ligament is divided on the uterine side of the ligature. Clamp forceps may be used to check

the oozing which comes from the uterine end of the divided issue. This is done on both sides and then the posterior flap is marked out with a knife and dissected downwards for a short distance. The uterine arteries can now be generally felt without difficulty, and may be seized with a pair of pressure forceps at the level of the os internum. The tumor is now cut away with a knife, at the appropriate level, and the stump caught up and drawn to the surface with volsellum forceps. The uterine arteries are now carefully tied. This plan takes less time than if the arteries are tied before the tumor is cut away.

After this has been done I always introduce what I call a precautionary ligature, a curved needle on a handle armed with silk is thrust through the stump from before backwards, avoiding the peritoneum so as to allow the ligature to include in its grasp the outer growth of the stump. This is tied on the outer side and includes the uterine artery which, however, has already been tied separately. A similar ligature is now tied on the other side. The object of these ligatures is to control oozing from the cut surface. Vessels are given off obliquely, not horizontally from the uterine artery and, therefore, although this artery has been tied on the level of the cut surface of the stump there may be some bleeding point owing to a branch springing off from the main artery below the point where it is secured, and running upwards and inwards. Such vessels are often seen especially on the posterior half of the stump. By this means all oozing or spurting, as the case may be, is generally stopped at once, and even if there is no oozing it is a safe precaution, as no harm results from thus enclosing uterine tissue in a ligature. Vessels in the substance of the cervix should never be tied on the face of the stump, as the ligatures will almost certainly come off. If oozing continues, as it will sometimes in a very vascular stump, a curved Hagedorn's needle may be used to encircle the bleeding area, and the tissue and vessels compressed with a ligature.

I think these additional precautionary ligatures are of value, because in the one fatal case which I have had (Case 8), death resulted from secondary hemorrhage thirty-six hours after the operation as the result of the slipping of a ligature applied to a small vessel on the posterior part of the stump. In this case both the uterine arteries had been tied in the ordinary way, but no precautionary ligatures had been used. At the post-mortem exami-

nation the uterine and ovarian arteries were securely tied, but about a pint of blood had escaped from a vessel on the posterior part of a stump which, at the time of the operation, had been secured by a superficial ligature. Since then I have always employed these lateral ligatures and have never found that they have caused the least harm, and they afford a rapid and effectual means of checking oozing. In no case have I ever seen any ligatures discharged either through the abdomen or through the vagina.

In the fatal case above mentioned the patient did very well for the first 36 hours, but in the middle of the second night she suddenly became faint and showed symptoms pointing to internal bleeding, and sank in a few hours before I had the chance of seeing her. I may add that probably the best way of dealing with secondary hemorrhage from the stump if it does occur would be to excise the stump *per vaginam*, using clamps to control the uterine arteries. This would entail considerably less shock than re-opening the abdomen and could be done rapidly.

After the oozing has been stopped I generally put in two fore and aft sutures through the muscular substance of the stump, again avoiding peritoneum, and in this way the raw surface is rolled together. They probably are of no great importance, but they serve to hold the stump up with, whilst the peritoneal flaps are united. After this has been done the peritoneum is cleansed and the abdomen closed.

May I offer a plea in favor of the simplification of abdominal operations? Personally I seldom use more than six pairs of pressure forceps, and never more than six sponges. Further, I never have more than one assistant, and I never allow anyone but myself to touch my instruments and ligatures. I will not trouble you with other details as regards the management of sponges, but I hold that as few people should come within the circle of the operation as possible.

The desirability of leaving the ovaries seems still to be doubted by some, and we are told that after the removal of the uterus they undergo slow atrophy, and thus a real menopause develops in spite of their presence. Even if this is the case it is still, in my opinion, highly desirable to leave one or both of them, because by so doing the acute development of the climacteric is avoided. During the gradual atrophy the climacteric disturbances are in no way greater than when they supervene as the result of a gradual

loss of physiological activity. Although I have not been able to follow all my cases since operation, yet I have seen many of them, and in no case have I met with any serious, mental or bodily disturbance such as so often follows after oöphorectomy.

The most serious complication at the time of operation is the presence of old adhesions between the enlarged uterus and the adjacent structures such as may result from a previous attack of perimetritis, secondary to tubal disease.

In four of my patients (Cases 36, 39, 40, 42) a single or double pyosalpinx existed, and inasmuch as this condition is somewhat rare I propose to narrate briefly the chief features of these cases.

CASE I.—This case was first seen by me on January 9th, 1889, in consultation with Dr. Sunderland. The patient was a widow and had never been pregnant. During the previous October and November she had suffered from abdominal pain accompanied by some pyrexia, and had been obliged to remain in bed for several weeks. On December 24th she was suddenly taken ill with severe abdominal pain and vomiting, and the temperature rose to 104 degs. F. Since then the pain had become less severe, but the temperature still remained between 100 degs. and 101 degs. The patient was markedly anaemic and the monthly periods were profuse. On examination a fibroid tumor was found reaching up to the umbilicus, but nothing further could be made out.

The operation was performed on January 12th, 1899, in a nursing home. Both tubes were found to be enlarged and adherent and contained pus. Both ovaries were enlarged to the size of hen's eggs and contained pus. The enlarged ovaries lay deep down by the sides of the supra-vaginal cervix. The uterus was first cut away to give more room, and then the appendages were cut out after much difficulty. Pus escaped from both tubes and ovaries during removal. No drainage was employed. Convalescence was normal.

CASE II.—This patient, aged 50, was admitted to the Royal Hospital for Women and Children in June, 1899, complaining of profuse irregular hemorrhage. A large tumor, the size of a six months' pregnancy, occupied the abdomen. On vaginal examination a tumor the size of an orange could be made out in Douglas's pouch, and another similar tumor lay in front of the cervix. At the time of the operation the abdominal tumor was found to be enlarged uterus, and the other two tumors were the Fallopian

tubes distended with pus. The uterus with both ovaries and tubes were removed. The convalescence was remarkably smooth.

CASE III.—This patient was aged 35, and was seen by me with Dr. Squire at the Paddington Infirmary. She had been taken ill three weeks before admission with severe headache and abdominal pain, and a week later she became delirious and remained so till after the operation. When seen by me the abdomen was distended and tender, the temperature was raised, the tongue was dry and brown, and there was noisy delirium. A fibroid tumor reached as high as the navel. The cause of her illness was obscure, but as her condition was very grave an operation was decided on. I performed hysterectomy on July 3rd, and both appendages were then found to be enlarged and very adherent. They were removed with great difficulty, and found to contain offensive pus. There was free oozing from the pelvis, and a drainage tube inserted. The oozing continued for the first 24 hours after the operation. Two days later the discharge from the tube became offensive and remained so for several days, but ultimately the patient got quite well.

CASE IV.—The patient was 42 years of age, and was admitted into St. Mary's Hospital for severe menorrhagia and abdominal pain. There had been pyrexia for some weeks before admission and the patient was very ill. There was a fibroid tumor which reached up to the navel, and in the left posterior quarter of the pelvis a smooth elastic swelling could be felt, the size of a hen's egg. At the operation, September 14th, 1899, the left tube was found converted into a pyosalpinx. It, together with the uterus was removed. Both ovaries were left. There was a good deal of oozing from torn adhesions, but no drainage was employed. The patient made a good recovery.

It has been impossible in the time at my disposal to do more than touch on some of the points of interest in connection with this subject, but my chief object has been to support the view that of all the radical operations for fibroids, abdominal hysterectomy with subperitoneal treatment of the stump is the best and the safest, and that this operation may confidently in the future be looked to to give a mortality of not more than one or two per cent.

A CASE OF BILHARZIA HAEMATOBIA.*

EDWIN WALKER, M.D.

The Bilharzia Haematobia has often been described before, and is generally found in Africa, or in persons coming from there. The case reported is in a woman from Southern Illinois, she never having been out of the Mississippi Valley.

The patient was a slender, delicate woman about thirty years of age. She first came to me in 1897 for an ovarian tumor. After removing the cyst she was immediately relieved. She remained fairly well until early in 1898, when she began to suffer with pains in the region of the bladder. She also had hemorrhages at intervals, which her physician thought came from the bladder. She returned to me in September, 1899. By an examination the remaining ovary was found to be cystic, and it was removed at once. She convalesced from the operation without incident. She had had no flow of blood since her admission. Blood appeared in the urine in a few days. An examination of the urine showed a specific gravity of 1016, acid reaction, mucous and red blood cells, and some albumin. The albumin was present only when there was blood.

The pains in the bladder persisted. The urine was now drawn by catheter, which proved the source of the blood. The pains were worse in the evening, and the patient slept but little. Then came gushes of fluid from the bladder, some of which was caught in sterile pans. It was of pale color, specific gravity 1001-6, reaction neutral and containing but little urea. In this fluid were found the ova and embryo of the parasite. Those which were entangled in the sediment were closely observed. The most of the others moved very rapidly. Some of this fluid was drawn by catheter. It also contained the ova and embryo. The embryos were larger than the ova, varying from .1 to .12 m.m. long and about .05 m.m. wide. They showed all the characteristics as

*Original abstract of paper read before the Southern Surgical and Gynecological Association at New Orleans, December 7, 1899.

those described by Cobbald. The ova were from .08 to .1 m.m. long. Two small worms were found, which undoubtedly were just hatched out.

Under anaesthesia the cystoscopic examination showed the mucous membrane of the bladder to be covered with cicatricial patches irregular in size and shape. The ureteral orifices were elevated and could not be catheterized. Repeated examinations had been made for hydronephrosis, but at no time were there any symptoms, yet this fluid came at intervals and sometimes as much as a gallon at one time. It now seemed apparent that there was a sac posterior to the peritoneum, back of the bladder.

The treatment consisted of Santonin gr. V three times a day, and bicarbonate of potash in large doses. The ova disappeared in a few weeks, after which the patient left the sanitarium, but since she has reported that there was some blood passed at times.

The parasites have been found in most parts of Africa, and Bilharz, Cobbald, Harley, Allen and others have written much about them. How the parasite gains entrance into the body is uncertain, but it is probably through the waters or vegetables, or in bathing. Boys who bathed in streams most frequently had it. It seems to affect the genito-urinary tract most frequently, but has been found in the liver and portal vein. When in the genito-urinary tract, pain in the region of the bladder and blood in the urine are the most common symptoms, the presence of the parasite, embryo or ova completing the diagnosis.

Evansville, Indiana.

EDITORIAL.

Since the interests of the profession are evidently affected by the increase in the number of hospitals, which is progressing with such startling rapidity, it is well to consider whether the profession as a whole is benefited thereby, and whether there are any disadvantages which can be overcome by individual remonstrance or by collective protest.

In the first place, it may be conceded that the highest humanitarian and scientific interest both of the profession and the public are served by having a well equipped hospital established in any community.

Diagnosis is more accurate, treatment more satisfactory, results more favorable, in the vast number of cases which cannot well be treated at home, owing to poverty, cramped quarters, solitary mode of life, infectious nature of disease, etc.

Proper and clean surgery is done to best advantage as to assistance, asepsis and nursing, in a thoroughly good hospital, and in every such institution a school of surgery gradually develops, the younger men learning from the older ones, and in turn bringing to the notice of the latter the most recent improvement in the art, and the authority of the latest literature on the subject.

All this postulates, however, a hospital well enough equipped to give opportunity for a high grade of professional work, and well enough supported to permit of the best methods in diagnosis, treatment and nursing; a hospital that is clean, with well-trained nurses, and everything in the best order.

It will hardly be claimed that all the little hospitals which are being established in every town of a few thousand inhabitants in New England fulfill all these desirable conditions. In nearly all of them the lack of money is annoying, and impecuniosity is chronic. Then begin the attempts to support the hospitals by defrauding the profession, under the pressure of necessity and the specious plea of furnishing suitable accommodations for those who are not poor, but who cannot be properly cared for except in

a hospital. Private rooms are therefore established, and in order that the hospital shall get all the patient is able to pay, the rule is made that no fee shall be asked or accepted for professional services rendered in the hospital by the physicians or surgeons on duty.

In order to satisfy the latter, and indirectly to pay them for their services, it is ordered that no medical men except those on the staff shall treat patients in the hospital.

Thus gradually the community is educated into the belief that it is foolish to throw away money on doctors when the best of everything can be had at the hospital for nothing, or for very moderate board, with medical attention or surgical operation thrown in as a sort of chromo or bonus for the honor done the hospital by accepting its accommodations at about half their actual cost.

Gradually but surely the sources of professional livelihood are being cut off, as the streams dry up when the forests are cut down, until the future looks dark indeed for the army of eager candidates who are entering the profession.

The proper work of the hospitals also suffers by the presence of well-to-do patients, together with the worthy poor. Human nature is the same everywhere and the poor and lowly can never receive the same consideration and disinterested devotion, when the time, sympathy and self-interest of visiting physicians, internes and nurses is attracted by patients in the same hospital who have money, friends and social position.

The lack of money also prevents the little hospital from permitting first class work. There is no laboratory for research, no money for anything but bare necessities, no library, no microscope, perhaps; no proper isolation of septic or infectious cases; above all, no possibility of rigid cleanliness in an old house, not built for a hospital, and without money to pay for the continual cleaning and scrubbing, painting, fumigating, cleaning of mattresses, scouring of walls and ceilings, plentiful laundry facilities, etc., which make absolute cleanliness a luxury when it should be a fundamental condition.

It may be said that these evils are evident to us all, but the remedy is hard to find, and if found, impossible to apply. That may be, and yet it would seem that the problem is not so difficult that nothing can be done to remedy acknowledged evils.

The latter spring first from the founding of a hospital in a community unable to support it, or not educated up to its duties in this respect. Secondly, from the management of the hospital by business men or women who are bound to get all they can out of the doctors, whom they do not appreciate as to their science or motives, and covertly despise for their want of sound business principles, and their eager underbidding of each other, as the managers consider it, involved in the struggle for appointments on the hospital staff. Thirdly, from the willingness of the members of hospital staffs to hold positions which they know are injurious to the profession at large, because they are profitable to themselves personally, in increase of experience, reputation and practice.

The first cannot be changed. Hospitals will spring up as birch-trees come up in the pastures. They are a part and sign of the general humanitarian tendency of the times; they are on the whole a benefit to the public and to the profession. It is only the concern of the profession to make the community support them directly, and not by cheating the doctors, and especially to take care when the hospitals are established that the profession is treated fairly in the rules and regulations by which the institutions are to be governed.

The second difficulty can be met, and should be met squarely by a demand on the part of the profession that no patient should be treated *free* in a hospital who is able to pay for medical attendance. In practice this would result in demanding that all who can pay the hospital over some seven dollars per week, and especially all who pay for a private room, should pay for their medical or surgical treatment.

These follow as corollaries : 1st. That patients in private rooms should have the right to choose their own medical advisers. 2d. That the surgeon or physician on duty should not attend such patients in private rooms gratis. 3d. That any reputable physician should have the right to send his patients to the private rooms of a hospital and attend them there, making his own terms with the patient for his services, while the hospital collects for board at terms agreed on in advance.

Inquiry shows that in some hospitals substantially these features of management prevail, usually in small towns, with the happiest results, for the hospital there is a distinct advantage to the profession as well as to the public.

In the large cities, however, where hospital appointments are much prized, and are obtained by various and sometimes devious influences, a position on the staff becomes so valuable, that the managers simply compel the visiting surgeons and physicians to attend well-to-do patients in private rooms gratuitously. No member of the staff can refuse to do this, for there are plenty of able and ambitious men wanting his place. Meanwhile the indirect advantages in experience and reputation undoubtedly pay him for losing his fees. It is the "outside doctor," the profession as a whole, that suffers. The remedy is also in the hands of the profession, by insisting that it will not endure the present conditions, and by putting such pressure on the members of hospital staffs, under penalty of refusal to call them in consultation, as will enable the staff in turn to dictate to the managers as to the evil of gratuitous treatment of paying patients.

Here come two difficulties. First, the profession must so formulate its demands that the staff will be obliged to obey them, which they will not want to do if it involves letting outside doctors bring private patients into the hospital. Secondly, the profession must be so united that if the staff does act, and if the managers simply tell them that if they do not care to stay they had better resign, there will be such a pressure of professional opinion that vacancies so created cannot be filled by competent men. It does not seem as if these difficulties were insuperable, and therefore with proper united action the present great and growing evil can be abated.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Regular Meeting, held February 13, 1900.

THE PRESIDENT, CLEMENT CLEVELAND, M.D., IN THE CHAIR.

Dr. Herman J. Boldt showed a Gangrenous Dermoid Cyst which he had removed from a woman four months pregnant. There had been torsion of the pedicle. The patient soon showed signs of intestinal paralysis; which had finally yielded to enemata of asafetida, turpentine and milk. She soon thereafter aborted, and died on the sixth day after operation. The stump of the pedicle showed the clean, contracted markings of the angiotribe which had been used. At the autopsy a collection of pus had been found in one horn of the uterus.

Dr. Egbert H. Grandin presented a specimen of adenoma of the uterus, mainly to raise the question of The Value of Microscopic examination of Uterine Scrapings.

Dr. Grandin said that he had seen four cases of adenoma uteri in recent years, in two of which the diagnosis had been confirmed microscopically, and in two it had been negative. In the case now shown the patient was 42 years of age and suffered from menorrhagia. At the operation which was undertaken, the uterus seemed large, and there was a bulging in the posterior wall which suggested adenomatous tissue. A hysterectomy was done and an adenoma was found. Dr. Grandin raised the question as to the dependence which the operator should place on the microscopic findings.

Dr. Grandin next showed a specimen from an Ectopic Gestation which he had removed from a woman who had last menstruated in November, 1899, somewhat less than usual. The following month she flowed a little more than usual and had severe colicky pains. The patient was curetted a month later, and dur-

ing the operation the curette slipped away and it was decided to open the abdomen. The tubal gestation was then found. Dr. Grandin called attention to the absence of the so-called classical symptoms, especially amenorrhea, and stated his opinion that colicky pains are the most important symptom of ectopic pregnancy.

In the discussion Dr. J. E. Janvrin said that in the diagnosis of extrauterine gestation an unusually profuse or irregular flow is to be considered in making the diagnosis, and agreed with Dr. Grandin in attributing importance to the sharp, colicky pains.

Dr. Henry C. Coe narrated a case in which the patient skipped one period and then bled for several weeks, having also colicky pains. After curetting by her physician she had a temperature when seen. A subsequent curetting brought away a mass as large as a two-months' pregnancy. The symptoms, however, had been the classical ones of tubal pregnancy.

Dr. Ralph Waldo reported a case of his in which there were no colicky pains, but profuse hemorrhage. A movable tumor of small size proved on operation to be a tubal gestation sac.

Dr. H. N. Vineberg was not certain of the infallibility of pathologists in making diagnoses of malignant uterine disease. He referred to a case of his in which he had submitted uterine scrapings from a woman of 38, who had bled profusely, to a pathologist. The report was carcinoma. At the operation a polyp was found to have been the source of the bleeding. Referring to Dr. Grandin's tubal pregnancy, he thought that irregular hemorrhages were far more frequent in this condition than amenorrhea. Dr. Vineberg also called attention to his observation that women who are having intraperitoneal hemorrhages frequently faint.

Dr. E. B. Cragin said that one reason that surgeons sometimes have unsatisfactory results from pathological examinations was because they do not send good specimens. The curetting for this purpose must embrace every part of the uterus, and all the scrapings must be submitted. Dr. Cragin also said that it is evident that there is no single reliable symptom of ectopic gestation on which to base a diagnosis. All the symptoms must be considered and each case judged individually. When the family physician states that the patient has had a miscarriage, that he has curetted and found the uterus empty, the diagnosis of ectopic gestation must be held in mind.

Dr. Andrew F. Currier spoke of the abuse of the curette, and insisted that for diagnostic purposes the curettage should always be done by the gynecologist. He also spoke of the absence of pathognomic symptoms in tubal pregnancy until the advent of a rupture.

In closing the discussion on these cases, Dr. Grandin said that he wished to make the point that his patient with tubal pregnancy had neither amenorrhea nor hemorrhage.

Dr. Grandin reported a case of Lymphatic Puerperal Infection in which he had aborted puerperal sepsis by performing a hysterectomy. The patient had a history of acute metritis and peritonitis following abortion. The diagnosis seemed doubtful, in spite of the tympanitic abdomen and the doughy cul-de-sac. A hysterectomy was decided upon, when the section disclosed the peritoneal cavity filled with sero-pus, the intestines and bladder covered with a greenish deposit, and the blood vessels thrombosed. The tissues were soft, making ligation difficult. The patient recovered with a vesico-vaginal fistula, caused by an accidental rent in the bladder during the operation. Previous to the operation three kinds of antistreptococcic serum had been used without avail. The case was regarded by Dr. Grandin as one of undoubted sapremia. He emphasized the difficulty of making a diagnosis in these cases early enough to save the uterus, especially when the infection is a mixed one, as it was in this case. In the purely sapremic cases an antistreptococcic serum is useless.

In the discussion of this case, Dr. H. N. Vineberg took issue with Dr. Grandin as to the indications for removing the uterus for puerperal sepsis. He agreed with German observers that if there are no streptococci in the blood, and if the kidneys are in good condition, the operation may be performed with safety.

Dr. E. B. Cragin believed it safer to teach that abdominal or vaginal hysterectomy should not be done in cases of puerperal sepsis unless it is strictly indicated.

Dr. Abram Brothers presented a specimen of Hysterectomy for Malignant Disease of the Uterus.

The patient was 28 years of age, had had one child and two miscarriages. Ten weeks before, an amputation of the cervix and a curettage had been performed at a hospital. The patient had for some time been menstruating every twelve or thirteen days, then ceasing for a few days, only to return. On January 13 she was

subjected to an intrauterine vaporization at 212° F., but this did not stop the bleeding. A hysterectomy was then undertaken. A small cyst of the left ovary was found. Hemorrhage was controlled by clamps. The pathologist reported the case to be an early carcinoma, the uterine wall showing hyperplasia.

In discussion Dr. Grandin said that he prefers to remove both ovaries and tubes when doing a hysterectomy, as he does not fear the establishment of a premature menopause.

Dr. Clement Cleveland presented an Intraligamentous Cyst which he had removed. The cyst and uterus had formed one mass and a total hysterectomy had been performed. The upper part of the cyst had first been removed by the application of a clamp. Dr. Cleveland prefers this method to that of emptying the cyst and allowing the sac to contract.

Dr. Cleveland then showed a uterus which he had removed by Supravaginal Hysterectomy.

On opening the cul-de-sac many adhesions were found, and the tubes, ovaries, and uterus were enlarged, although there was no history of gonorrheal infection. On each horn of the uterus a mass the size of a hen's egg was felt, which, it was thought, might be distensions by pus. Supravaginal hysterectomy was then decided upon. Pus was discovered in both horns of the uterus, as well as in the interstitial portions of the tube.

Dr. Cleveland next showed a specimen which was removed by Myomectomy and Hysterectomy.

Six years previously the patient had been operated for lacerated cervix, having the fibroids at the time. She had reported from time to time, but it was but two weeks previously that Dr. Cleveland had operated her on account of increasing pressure symptoms in the rectum and bladder. Upon opening the abdomen a large mass was found which filled the pelvis so completely that the ovarian arteries could not be reached without a preliminary myomectomy. The upper mass and then a lower one were removed, and finally a supravaginal hysterectomy was performed.

Dr. Henry C. Coe reported A Cyst Developing from an Ovary after Conservative Operation in a patient upon whom three celiotomies had been done. The woman had had her left tube and ovary removed three years previously. In March, 1899, she was admitted for persistent pain in the right side with dysmenorrhea. The right tube was found to be generally enlarged, thickened,

and occluded, the ovary being apparently normal. The tube was resected and the ovary left *in situ*. In November, 1899, she was readmitted, complaining of severe pain in the right side, increased at the time of menstruation. A cystic tumor the size of a small orange was felt near the right horn of the uterus. This became noticeably larger at the menstrual period, diminishing in size afterward. She was not operated at this time. She was again admitted February 5, 1900, and when the abdomen was opened a few days later a simple follicular cyst of the right ovary was found, the stump of the tube being healthy. The case was reported, mainly to emphasize some of the possible results of conservative operations on the adnexa.

In the discussion Dr. Waldo said that he had recently had a similar case, in which a small cyst had developed in the portion of the ovary left behind.

Dr. Bache McE. Emmet said he had seen two cases of a similar nature. He said that in treating cystic conditions of the ovary one must consider the amount of disease in the organ and the age of the patient. He prefers the radical operation if age and circumstances permit.

Dr. Clement Cleveland showed A New Angiotribe which had been devised by D. J. Dougal Bissell for compressing the tissues of a pedicle in order to do away with the use of ligatures. Dr. Cleveland said that he had used the instruments several times and had seen no bleeding follow its employment. In reply to a question by Dr. Grandin, he said that in women with small vaginæ more difficulty was experienced than in those in whom the vagina was capacious.

Dr. J. Riddle Goffe said that Dr. Bissell had anticipated Tuffier in the device of the angiotribe. He had used it in two inoperable cases and no bleeding had followed. He thinks Dr. Bissell's instrument easier to handle than the French angiotribe. In reply to a question by Dr. Dickinson as to the amount of sloughing after the use of the instrument, Dr. Goffe said that the discharge was very slight and that the stumps healed more promptly than when ligatures are used. By completely shutting off the vessels and lymph channels, it is of value in vaginal hysterectomy for cancer. It is also useful in reaching a high pyosalpinx which cannot be dragged down.

Dr. Cleveland added that all adhesions must be broken up before the instrument is applied, in order that the stump may not be dragged upon. Dr. Dickinson asked if there was more danger by handling the stumps after the use of this instrument than after using Dr. Skene's electric clamps, to which Dr. Cleveland gave assent. He believed that Dr. Bissell's instrument would supersede that of Tuffier, because it is more easily handled and is considerably cheaper. Dr. Cleveland said, in answer to a question of Dr. Waldo, that when there is apt to be a lateral traction of the stump he prefers the ligature, to avoid a possible separation of the tissues of the stump and consequent bleeding.

Dr. Boldt said that one great advantage which the Bissell instrument possesses over the Tuffier instrument lies in the groove which runs lengthwise along each of the blades and forms an additional barrier to hemorrhage from the stump.

Dr. Brooks H. Wells read the paper of the evening, entitled *The Clinical Significance of Duplication of the Uterus and Vagina*.

Dr. Wells traced the development of the uterus and vagina embryologically and from the standpoint of comparative embryology. In the human female the normally complete development or fusion of the Müllerian ducts is occasionally arrested, and we may then have a reversion to certain of the more primitive types, or a maldevelopment which may lead to serious interference with the genital functions and the welfare of the individual. The most common mark of an imperfect fusion of the Müllerian ducts is a hymeneal opening divided into two by a perpendicular band of tissue. Next in frequency is a more complete vaginal septum, then a partition extending partly or entirely through the uterine cavity, attended by a broadening of the fundus and by the more and more complete separation of the cornua until we reach the extreme of two entirely distinct uteri and vaginæ. The possibility of atresia always exists because of the unequal development of the two sides. The chance of impregnation is not diminished unless there is actual occlusion at some point, and the difficulty or danger of delivery is not markedly greater than normal unless the fetus is held in the rudimentary horn of a double uterus.

Dr. Wells reported four cases illustrating the deformities due to maldevelopment.

CASE I. Pregnancy in both Cavities of a Bilocular Uterus, Abortion.—The patient was the mother of several children. She was seen at the office of the gynecologist because of uterine cramps and bleeding. He found an ovum protruding from the dilated os, which he removed, packing the empty uterine cavity. When seen the following day, Dr. Wells was surprised to find further hemorrhage and another ovum presenting itself. A careful examination disclosed the fact that the patient had a septum dividing the uterus into two cavities, each of which had been pregnant.

CASE II. Pregnancy in Right Cavity of a Bilocular Uterus; Abortion.—Examination of a multipara disclosed a softened and enlarged uterus. The cervix was patulous and there was a slight bloody discharge. A curette and an ovum forceps passed into an empty cavity. The next day the pains continued, and another examination revealed an ovum protruding through an apparent hole in the upper part of the cervical canal. The other cavity had been packed with gauze. The removal of the ovum caused the disappearance of all symptoms.

CASE III. Double Uterus, Double Vagina, Retrohymeneal Atresia, Bilateral Hematometra and Hematocolpos.—A girl 14 years old complained of pain in the rectum and lower abdomen. The pain had begun as a feeling of distension about the lower part of the pelvis, which had been felt at intervals for several months. Under anesthesia it was seen that her general configuration was that of a boy, the arms and legs being unusually hairy. The breasts were small but feminine. The hymen presented a small opening on either side of a central perpendicular septum. Behind the hymen and closely applied to it was a thick layer of tissue which occluded the vaginal openings. Abdominal distension and a fluctuating area behind the septum made the diagnosis of retained menstrual blood fairly certain. A crucial incision was made through the distended hymeneal membrane and over a quart of reddish-brown fluid was evacuated. Digital examination showed that there were two apparently distinct uteri, both widely dilated, and two vaginal canals separated by a thick, fleshy septum. Two months later the vaginae had contracted to half their previous diameter. The uterine horns were small but distinct. The cervixes were small and united to each other by a transverse band at the vagino-cervical junction. Menstruation was now normal.

CASE IV. Pregnancy in the Right Horn of a Completely Bicorned Uterus; Supravaginal Hysterectomy of the Pregnant Side. —A woman of 28 presented herself in March, 1899. She was the mother of three children, and had last menstruated in September, 1898. She complained of cramps in the right side of the pelvis. For three months there had been slight irregular bleedings. A week previous the fetal movements had ceased and the pains had become more severe. Examination showed a five-and-a-half-months pregnancy. The body of the uterus lay to the left side and in front of the gestation sac. On searching for the right cornu a deep sulcus seemed to lie between it and the pregnancy. This sulcus extended apparently down to the vaginal junction, where a small pedicle branched off from the uterus and could be palpated until it expanded into the pregnant mass. It was then evident that the case was one of pregnancy in the less well-developed horn of a uterus bicornis unicollis. The sound showed the depth of the unimpregnated horn to be about three inches, with no opening into the right uterus. Believing it impossible for the woman to be safely delivered through the narrow pedicle, it was deemed best to remove the right uterus. The left uterus, ovary and tube were normal and were not disturbed. The horn removed was a rounded oval mass $5\frac{1}{2}$ inches in diameter, and 7 inches in depth. After some search the cervical canal was found to have a diameter equal to that of a large bristle. It was distinguished from a lymph space or blood vessel by its lining of columnar epithelium and by the plication of its walls.

In the discussion Dr. Dickinson said that an interesting feature of cases of double uterus lay in the fact that when these patients bear children, pregnancy takes place alternately in the right and left uterus.

Dr. Cragin narrated several cases in which the vaginal septum had interfered with delivery, rendering its incision or the removal of the hymen, in one case, necessary.

Dr. Currier told of a number of cases of these deformities which had come under his notice.

In closing the discussion Dr. Wells spoke of the amusing errors which sometimes arose in these cases because one physician had examined through one vagina and another through the other. An interesting feature in pregnancy in one-half of the uterus, in

cases of double uterus, is whether the uterus will dilate sufficiently for the child to be delivered. If it does not, the pregnant horn should be removed, even at the sacrifice of the child, since the children of such pregnancies are usually weak and ill-developed and do not live long.

BOOK REVIEWS.

The Index Medicus is to be continued in the *Bibliographia Medica*, a monthly journal under the direction of Messrs. C. Potani and Charles Richet, published in Paris. Each issue will be of 80 pages and will contain about 4,000 references. We feel sure this will be good news to many Americans. The price to us is sixty francs per year. The first issue appeared February 15, 1900.

"Gynecology." By Montgomery A. Crockett, A.B., M.D., Adjunct Professor of Obstetrics and Clinical Gynecology, Medical Department, University of Buffalo, New York.

This is one of the Series of Pocket Text-Books from the well known firm of Lea Brothers & Co.

It presents the essential features of the subject in moderate compass, reflecting the accepted views of the foremost authors and practical gynecologists.

It is equivalent to a well made abstract or to notes of good lectures carefully taken. Of course a work of this size cannot be sufficiently explicit to be a guide to practice and operations; it is essentially a student's compend, and as such will be useful in preparing for examination.

The illustrations are excellent and the appearance of the book is particularly pleasing.

"Diseases of Women: A Treatise on the Principles and Practice of Gynecology for Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, Gynecologist to St. Luke's Hospital, Chicago, etc. Second edition, revised and enlarged. 700 pp., with 453 illustrations, many of which are in colors. Lea Brothers & Co., Philadelphia and New York.

The second edition of this valuable work fully sustains the reputation of the book and brings in many new features. Four new chapters have been added, dealing with menstruation and all its disorders, both in themselves, and as symptoms of disease, and in connection with sterility. There are also additions to other chapters, noticeably those on Cystitis and Diagnosis.

In this edition, as in the first, the subjects are grouped, not by the regional method, but so far as possible from the standpoint of pathological and etiological sequence.

This is the natural order both for studying and teaching, and this arrangement makes Dudley's work very useful for use as a text-book in medical schools.

In discussion of the various questions connected with medical gynecology, the sound judgment of the author is apparent, *e. g.*, the chapter on dress and the demonstration of the troubles and deformities resulting from the use of the corset.

As to questions involving surgical practice which are still under discussion, such as less frequent use of drainage, the performance of hysterectomy in most or all cases where the appendages have to be removed, etc., the author shows a caution in accepting the new, befitting a responsible teacher, together with a fair presentation of the subject, such as might be expected from an able and experienced surgeon.

It is perhaps unnecessary to add that in colored plates, fine engravings and mechanical execution, the book is in accordance with the high reputation of the publishers.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting January 9, 1900.

THE PRESIDENT, DR. E. E. GRAHAM, M.D., IN THE CHAIR.

Dr. Hamill presented "A Case of Congenital Heart Disease Occurring in a Girl Aged Eleven Years." She was perfectly well until seven years of age. Since then she has lost flesh gradually, but persistently. Her previous history includes an attack of measles and three sharp attacks of follicular tonsillitis during the past three years. She suffers from disturbed digestion, dull aching pain in her head, cardiac palpitation and dyspnea on slight exertion. The last two symptoms are the most persistent and annoying. She has never had any hemorrhages. There is no clubbing of the fingers or toes, and no history of cyanosis. The apex beat of the heart is in the fifth intercostal space just within the mid-clavicular line; it is fairly forcible. Over the pulmonary area can be felt a late systolic thrill which is followed by a distinct diastolic shock. The area of cardiac dulness begins above at the second rib, an inch to the right of the right edge of the sternum and to the left just outside the mid-clavicular line. Auscultation shows a slight short roughening of the first sound at the apex and in the second left interspace, close to the sternum, a rather low-pitched, prolonged late systolic murmur which is heard, though much less distinctly, in the first interspace, and is followed by a loudly accentuated pulmonic sound. The heart's action is regular and rapid. The lesion giving rise to these signs

is probably a congenital pulmonary stenosis accompanied by persistent ductus arteriosus. As against its being of post-natal origin is the extreme frequency of lesions of the pulmonary orifice occurring after birth, and the marked accentuation of the pulmonary sound.

DISCUSSION.

DR. F. A. PACKARD.—I quite agree with Dr. Hamill that this is a case of pulmonary stenosis. I very much doubt if we have a right to call it congenital heart disease. The absence of cyanosis and of clubbing of the fingers, while never essential to the diagnosis of congenital heart disease, certainly points against it. There are such a large number of instances of pulmonary stenosis in children apparently not congenital, that I think we ought to be on our guard in this class of cases against thinking that because the right side of the heart is affected, it is therefore a case of intra-uterine infection. I have looked into the subject of pulmonary stenosis during the past year with considerable interest, and am surprised to find how many cases are recorded. Dr. Hamill says the child has had repeated attacks of tonsillitis; it has happened to me to see a series of cases of endocarditis following tonsillitis and several of the cases that I find in literature have affected the pulmonary valve. There was an example of this in Charrin's fatal case, where the connection between endocarditis and tonsillitis was perfectly plain.

There is an interesting physical sign, the accentuation of the second sound on which Duroziez laid particular stress in attacks of pulmonary stenosis. This case presents that condition typically.

DR. S. M. HAMILL.—I was under the impression that Duroziez's observations with reference to accentuation of the second pulmonary sound referred exclusively to cases of congenital heart disease. The presence of an accentuated pulmonary sound would lead me to suspect a congenital rather than a post-natal lesion. I cannot conceive of the method of production of an accentuated second sound in the presence of a true post-natal pulmonary obstruction. I was much interested to hear Dr. Packard say that there seemed to be a special tendency toward the development of endocarditis of the right side of the heart in cases following upon an attack of follicular tonsillitis. I would like to ask him what explanation of this he has to offer.

DR. F. A. PACKARD.—I do not mean to say that endocarditis of the right side of the heart preponderates in those cases following tonsillitis, but that there are a great many such cases.

Dr. J. P. Crozier Griffith read a paper on "Miliary Scarlet Fever, with Report of a Case."

DISCUSSION.

DR. ARTHUR VAN HARLINGEN.—I do not feel prepared to discuss the question of miliary scarlatina, but it has occurred to me to mention some differential points regarding miliaria and sudamina which may throw light on the diagnosis. Miliaria et rubra is not necessarily an inflammatory affection of the sweat glands, but one of the skin, especially around the duct orifices. It is probably a form of eczema, due to heat, irritating clothing, acrid sweat, etc., and is situated in a sweat duct orifice area, as that is the part most hyperaemic or deranged in circulation. The evidences of the disease consist of small papules which may easily rise to vesicles as occurred in this case. Sudamina is entirely different. It is not an exudative affection, but is composed of a minute watery accumulation which is seen on the skin as simply a sweat drop confined at the opening of the sweat gland, the result of a hyperidrosis. Dr. Griffith has said very little about sudamina, and I would like very much to know if he considers that the two diseases occurred together in any of his cases. I can imagine that miliaria would occur in connection with scarlet fever as with numerous other eruptive diseases, and yet not be necessarily connected with the disease itself. It may occur as the result of hot clothing or from circumstances which give rise to excessive perspiration.

I would suggest that in the further examination of similar affections they should be differentiated.

DR. J. F. SCHAMBERG.—I have been much interested in the paper of Dr. Griffith, because during the past few years I have been making certain observations along this very line, upon the character of the rash in scarlet fever in general, and this miliary eruption in particular. I think Dr. Griffith has done well to emphasize the fact that many authors in text-books have labored under a delusion in calling these lesions sudamina. As Dr. Van Harlingen has said, the eruption in sudamina consists of dewdrop

like vesicles, non-inflammatory, and differing markedly from the lesions seen in scarlet fever. It is also important not to term these vesicles miliaria, because the term is used to designate a common eruption known as prickly heat.

I have recently made some microscopic section of the skin upon which these vesicles were present. Instead of there being merely an overfilled state of the blood vessels, there is more than that in some cases of scarlet fever. There is actually an outpouring, resulting in a circumscribed collection of serum which we see microscopically as a cystic vesicle in the deepermost portion of the rete mucosum, and which we recognize, clinically, as a small military vesicle.

I am inclined to believe that the greater the intensity of the rash, the more vesicles do we find; although we may find vesicles in cases in which there are quite mild rashes. In one or two hundred cases, however, the greatest number of vesicles seemed to occur in those in which the eruption is severe. The greater the number of vesicles present, the greater the desquamation. Frequently one does not see the vesicles present because one does not look sufficiently close; often on close scrutiny with the naked eye or a magnifying glass, one will be able to see minute vesicles, previously overlooked. The desquamation of scarlet fever occurs in quite a peculiar manner, at least upon the body. In the majority of cases it begins as a number of pin-point, powdery specks, corresponding to the desiccated summits of the military vesicles. Then there is a raising up of the surrounding cuticle, producing minute jagged rings or collarettes. These rings meet with other rings, enlarging peripherally, and we have patches thus formed which are gyrate or geographic in outline. In this manner the entire superficial layer of the epidermis is raised off. Upon the hands the desquamation differs because the anatomical structure differs, the horny layer of the epidermis being much thicker than elsewhere.

Desquamation is much the same in those forms of toxic dermatitis which simulate scarlet fever.

DR. J. M. TAYLOR.—I should like to ask Dr. Schamberg whether a statement which I have seen somewhere is correct, that the eruption of scarlet fever has a tendency to group itself about the hair follicles. In cases which I have seen it has seemed to me

that that was oftentimes noticeable. I should like to know whether he considers this peculiarity of value in a differential diagnosis.

DR. J. F. SCHAMBERG.—In answer to Dr. Taylor, I should like to say that in a section recently excised which represented a small reddish punctum on the skin I found that it corresponded to a hair follicle surrounded by a round cell infiltration, but I shall be obliged to examine more sections before I am able to say that the punctuated appearance is due entirely to an inflammatory condition around the hair follicles. It is common to note a goose-flesh appearance around the hair follicles, but this is not inflammatory.

DR. EDWIN ROSENTHAL.—I would like to ask Dr. Griffith if he finds the miliaria more numerous on the face and hands than on the trunk? Or if he has found them limited to the chest and back? It is well known that we always look for and find the eruption of scarlet fever starting in the upper portion of the chest, and most probably around the folds of the neck, whilst the vesicular rashes appear first on the face. The case of Dr. Griffith may also explain certain cases which we meet in some epidemics and which raise the question of chicken pox. These cases seem closely allied to chicken pox, but may at times be miliary scarlet fever.

If Dr. Griffith could give us some points of differentiation, I should be indebted. In cases of chicken pox the vesicles are often found in the child's throat. Were such vesicles found in Dr. Griffith's case?

PHILADELPHIA PEDIATRIC SOCIETY.

THE PRESIDENT, DR. ALFRED STENGEL, IN THE CHAIR.

Stated Meeting, February 13, 1900.

Dr. Augustus A. Eshner exhibited "A Case of Mitral Regurgitation and Pulmonary Obstruction" in a girl eight years old, who gave a previous history of measles and sore throat. She presented displacement of the apex-beat of the heart to the left, an increased area of cardiac percussion-dullness, and a loud systolic murmur at the apex, transmitted to the axilla, and a rough systolic murmur and an accentuated second sound at the left base.

Dr. J. P. Crozier Griffith reported a series of cases and exhibited some of the patients.

I. Congenital Heart Disease with Great Cyanosis and Clubbing of the Fingers.—Dr. Griffith remarked: The family history is negative. The boy is now seven years old although he looks much younger. The parents state that he has been well until very recently, but this is manifestly incorrect. Examination on January 5th disclosed the praecordial area not bulging, the apex beat scarcely perceptible in the fourth interspace, the cardiac dullness nearly normal except for very slight enlargement to the left. No thrill could be detected. Without reading all the details of the case-history I may say that there was a loud systolic murmur, which appeared to be the loudest over the midsternum, although it was nearly as loud at the pulmonary cartilage. There was also a murmur at the apex, and a faint one at the aortic cartilage. The murmur was transmitted under both clavicles and heard also to some extent in the back. The pulmonary second sound was decidedly accentuated.

As you can see, the appearance of the boy is very characteristic. The cyanosis is remarkable. The lips and tongue are blue and often intensely so, and at times he has large purplish areas almost like a bruise, on his cheeks. The hands and feet are con-

stantly blue and cold, and the clubbing of the fingers and toes is excessive. I do not think I have ever seen greater clubbing. The child does not seem very bright, but it is difficult to determine this on account of his inability to speak English. The condition of the child and the character of his murmurs indicate that he must have congenital heart disease. The interesting point is, what form of congenital heart disease is it? I believe the diagnosis can be reached with approximate certainty, although there is always an element of doubt in these cases. As we know very well, the experience of nearly all clinicians and pathologists shows that marked cyanosis is dependent oftener upon pulmonary stenosis than upon any other cardiac condition, if we leave out of account transposition of the arterial trunks and other curious anomalies about which we can reach no conclusion whatever, and the presence of which we have no reason to suspect in this child. If we have to do in this case with valvular lesions and anomalous openings only, it seems to me that the child clearly has pulmonary stenosis. The combination of cyanosis with loud systolic murmur at the pulmonary cartilage constitutes the ground for this belief.

We have still to explain the very loud systolic murmur over the mid-sternum. This is just in the position in which one would expect to discover the murmur of a perforate septum ventriculorum. The great cyanosis makes us suspect that there is a very decided degree of stenosis of the pulmonary artery. If this is so the blood must pass from the right to the left side of the heart either through a patulous foramen ovale or through a perforation in the ventricular septum. In the former case we should probably have no murmur produced, although there are exceptions to this rule. This patulous foramen may well be present here. We cannot tell. In any case the loud mid-sternal murmur indicates that we almost certainly have a perforation in the septum.

Finally, if we adopt the belief that the pulmonary stenosis is great in this case, we have to discover some path by which the blood can easily reach the lungs. This is oftenest done by means of a patulous ductus arteriosus. Have we any proof of the existence of such a condition here, as deduced from the physical signs? I think so. It is believed by most clinicians—although not by all—and seems certainly reasonable, that a pulmonary ste-

nosis of high grade must be attended by an enfeeblement of the pulmonary second sound, since so little blood enters the pulmonary artery. Yet this boy has a decided accentuation of his second sound. The only way in which this can be well accounted for is by assuming that the blood under the high pressure of the aorta enters the pulmonary artery through the ductus arteriosus and raises the pressure there to an unusual extent. As a necessary result the pulmonary leaflets close with an unusually loud snap.

I think, then, that the natural diagnosis in this case is pulmonary stenosis, perforate septum ventriculorum, patulous ductus arteriosus.

II.—V. Cases of Spastic Diplegia with Choreiform Movements.—I show you a patient with the following history: The father and mother are living; two brothers and two sisters are living and well. The child was born after a hard labor, and is now four years old. When she was six months old the parents first noticed a peculiar movement of the head and arm. She was brought to the Children's Hospital last November.

Your inspection of the child shows you a condition which speaks for itself. You will notice the nearly constant ataxic or choreiform movements, or a movement half way between the two—of the arms and the head, with a tendency to grimaces of the face. She can grasp one's finger, although with some difficulty, and after several efforts. She cannot talk at all, and her intelligence seems decidedly deficient. The knee-jerks are slightly increased. There seems to be no actual loss of power. The muscles are very fairly developed. There is great rigidity of much of the body.

She is an example of that class of cases which is puzzling, unless one is on the watch;—the cases of spastic diplegia with choreiform movements. The condition is interesting chiefly because it simulates other affections and leads to errors in diagnosis. Indeed, a diagnosis of Friedrich's Ataxia had once been made in this case. Something happened to the brain of this child, perhaps at birth, perhaps before it, although nothing was noticed by the parents until the baby was six months old. This is the usual history of cases of this kind. What the actual cerebral condition of this child is no one can tell. There has probably originally been a meningeal hemorrhage.

III.—The next case of this condition which I had intended to exhibit is too ill to be brought here tonight. It is that of a little boy with a history to a considerable degree similar to the one reported. The child is said to be a year and a half old, but in appearance it is not much more than infantile. There is a peculiar tendency to regular, rapidly repeated, jerking movements of the jaw. If one places the finger over the articulation it is felt that the jaw is being thrown partially out of place and back again. Combined with this movement there are irregular slow movements of the fingers, and apparently purposeless incoördinated movements of the arms. There is slight stiffness of the neck, and an irregular intermittent arching of the back. There does not appear to be any actual paralysis. The child is distinctly an idiot. The face and head have the peculiar appearance of the Mongolian type. The tongue is constantly being protruded and the lips pouted. We certainly have to do here with a spastic, choreiform condition resembling the last. The mental state, however, is vastly worse.

IV.—I have now under my care another child suffering from a similar disorder of motion, but with the mind, I hope, unclouded, although this is not quite certain. When I first saw it at the age of seventeen months it was enormously ataxic. It could not walk or stand or even creep or turn itself in bed, although there was no loss of power in its irregular movements. It could scarcely grasp an object put into its hands. There was no increase of knee jerk. When lying on its back there was no adductor spasm of the legs, although when held upright with its feet touching the bed there seemed a degree of cross-legged progression. All the child's movements, however, were rather ataxic than spastic. The incoördination was nearly absolute. It has now for seven months had daily massage and Swedish movements, and the improvement has been decided. It has learned to walk to some extent with a baby-jumper. It can stand when steadied slightly, and can grasp objects very much better than formerly. It has learned to say a few words. I am inclined to believe in this case that the inability to talk better is a motor trouble, for the baby shows every evidence of understanding what is said, and of being very fairly, if not entirely, bright.

V.—In this connection I may refer to the case of a woman who has had the disease from infancy and who has been an inmate of the Philadelphia Home for incurables for fully twenty

years. Apparently, as far as can be learned, she is mentally sound, but she has the most violent and uncontrollable contortions of the whole body, particularly when addressed or excited in any way. She cannot speak a word, but by curious violent ataxic movements of the arms she will indicate what she wants and what she feels. For instance, after excessive waving of her arms she can finally get her hand to her abdomen or chest, accompanying this by peculiar grunts to indicate that she has a pain there. It is also possible to discover when she has sensations of pleasure. Other inmates of the home, who see her constantly, are convinced that her mind is clear, and I believe they are right.

VI. Stenosis of the Larynx in Typhoid Fever.—The last case I have to exhibit is a patient convalescent from stenosis of the larynx in typhoid fever. The child, a boy of nine years, was brought to the Children's Hospital November 16th, at the end of the first week of fever. The disease ran an ordinary course until about the middle of December, when the temperature rose considerably, and remained so without discoverable cause. Towards the end of the month there was suppuration of the middle ear, a profuse discharge from the nose, and increasing hoarseness. The case was supposed to be one of diphtheria developing as a sequel. Laryngeal stenosis became so great that intubation was constantly impending. There was almost complete deafness. Repeated cultures failed to show the presence of Klebs-Loeffler bacilli. The child was extremely weak and ill but gradually improved and the stenosis slowly lessened. Cultures still showed no germs of diphtheria. An attempt at a laryngoscopic examination was made by Dr. W. J. Freeman during the height of the attack, but was unsuccessful, owing to the serious condition of the child. A second examination was made on January 15th, while stenosis was still present but lessening. This showed oedema of both arytenoids and swelling of the left ventricular band and of the right vocal cord.

I believe we have an instance here of laryngeal stenosis due to typhoid fever. Whether or not there was anything more than oedema at first cannot be known. These cases of stenosis in typhoid fever occur from time to time, and we find a considerable number recorded in medical literature. Yet in the individual experience of most physicians they are certainly rare.

DISCUSSION.

DR. F. A. PACKARD.—The young colored boy came under my care at the time of the development of the laryngeal symptoms. The boy first began to be hoarse. I got Dr. Freeman to see him. The larynx was white, with a muco-purulent discharge from the nose. In spite of the fact the cultures were negative, the case was sent to the tracheotomy room because Dr. Freeman said the membrane was so suspicious of diphtheria that he thought the case ought to be isolated. My impression is that it was either a pericondritis of the larynx or possibly a simple typhoid ulceration of the larynx. That, of course, would not explain the rhinitis. The presence of the rhinitis in addition to the laryngitis made me feel, in spite of the negative cultures, that the case ought to be isolated.

DR. JOPSON.—I should like to mention in connection with this case one which I saw with Dr. Griffith two years ago. A colored infant a year and a half old came into the Children's Hospital in April of 1898 for what was diagnosed typhoid fever. The temperature ranged from 101° to 102° for two weeks. Two examinations of the blood for the Widal reaction were positive. The temperature declined gradually, reaching normal. When the child developed sudden severe laryngeal obstruction and the fever returned, I intubated the child with immediate relief. Cultures taken from the throat were negative. The child died the following day with symptoms of central respiratory failure. An autopsy was not made for several days, but when permission was given, an examination of the larynx was absolutely negative. The obstruction had probably been due to oedema as there were no signs of ulceration, pseudo membrane, or infiltration. The pathological findings in the intestine at that time were not in accord with the diagnosis of typhoid fever. Whether it was a case of typhoid fever with absence of ulceration I cannot say. It is the only case in which I have seen laryngeal obstruction dependent upon typhoid fever or any similar condition.

DR. L. J. HAMMOND.—In regard to the cerebral cases reported by Dr. Griffith, I should like to emphasize the fact that trifling injuries in children may later on give rise to symptoms of cerebral character. It is therefore important if we are to expect any treatment to be beneficial after the reception of an injury of this kind to explore, especially if the acute symptoms are followed after a few days or even weeks by great irritability, hebetude,

anorexia, alteration of pulse and temperature, and especially when the motor areas are involved. This alone can furnish us with a diagnostic guide. Upon trephining it will frequently be found that adhesions bind the membrane to the brain or to the bone. The exudate which follows upon these trifling blows may remain latent for a long period and eventually give rise to conditions which Dr. Griffith has spoken of this evening. Early trephining for minor injuries should certainly be instituted when a period of latency after either injury or disease of ear, nose or eyes is followed by brain symptoms.

Dr. G. G. Davis exhibited A Case of Double Congenital Luxation of the Hips; One Replaced by Manipulation and the other by Operation.

The patient shown was a little over five years of age. She started to walk when nine months old. It was noticed that her gait was unnatural, and as she grew older her back became hollow and her buttocks prominent. At the age of $3\frac{1}{2}$ years or after she had been walking for two years and nine months, she came under Dr. Davis's care at the Orthopaedic Hospital. She was found to possess the marked waddling gait of this affection. Lordosis was quite marked, the hollow in the back being pronounced. Both trochanters were well above Nelaton's line. In standing she did not hold herself perfectly erect but slightly flexed both the hips and the knees. Ether was administered and tenotomy of the adductors of both thighs performed. Then by manipulation both femurs were restored to their sockets. The luxations being both dorsal ones, the limbs were put up in plaster of paris in an adducted and outwardly rotated position. They were so kept for six weeks, and on examination the right hip was found still in position while the left was again out. The right leg, showing a tendency to inward rotation, a silicate of soda dressing with an iron strip was applied to keep it in proper position. Extension was applied to the left hip. The patient then had an attack of measles and about six months after the right hip had been replaced the left was again put in place and an incision made down to the capsule, and it was gathered together and sewed with three chromicised catgut sutures. The wound was packed with gauze. It was thought that perhaps enough contraction might be produced in the capsule to hold the bone in place. On removal of the plaster cast six weeks later the hip was found to be again out

of place, so two months afterwards the joint was opened and a fairly well developed femoral head was found. The capsule was stretched and the acetabulum was nothing more than a flat surface about the size of a thumb nail. By means of a gouge and roseburr (for a description of which see Trans. Amer. Orthopaedic Assoc., 1899), a new acetabulum was formed and the head of the femur placed therein. About two months after this operation a belt with perineal straps was fitted around the trochanters and the patient was allowed to walk about. Shortening on the operated side was about a quarter of an inch. A skiagraph taken by Prof. Goodspeed a short time after showed both hips in place. At the present time, eleven months since the last operation, and a year and ten months after the non-operative replacement of the right hip she walks with a slight limp. The shortening amounts to a half-inch, and she has lost entirely the waddling gait. The back is now straight, the lordosis having disappeared. About three months ago she had an attack of scarlet fever and since that time has not worn her hip belt nor any apparatus whatever.

DISCUSSION.

DR. BERTHA LEWIS.—I have a similar case, a private one, but the patient would not consent to be exhibited before the society. I have the skiagraphs which show the dislocation, more marked in the right hip than in the left. The left hip shows a wide acetabulum and no close juxtaposition of the head of the femur with the acetabulum.

As Dr. Davis says, the gait is so characteristic and the lordosis in these cases is so marked that it seems incredible that any one at all familiar with orthopedic work should have failed to make a diagnosis, and yet this case has been seen by a dozen physicians, including two surgeons, without the proper diagnosis having been made. The case had been diagnosed for pseudo muscular hypertrophy and was for 13 months in the hands of an electrician being treated for that disease.

I congratulate Dr. Davis upon his result. I should like to ask whether in the after treatment he applied a plaster cast to retain position after replacement.

DR. DAVIS.—After the replacement by manipulation the limb was placed in an abducted position with the legs rotated somewhat outward. This position was maintained for a considerable

length of time. A strong elastic hip bandage was adjusted, coming around the crest of the ilium and over the trochanters, being prevented from rising by two perineal bands. This was the only support she ever wore. It was worn until three months ago, since which time she has not worn anything.

Dr. A. M. Seabrooke reported A Case of Hemorrhagic Purpura in a New-Born Infant.

NO DISCUSSION.

Dr. F. A. Packard read a paper entitled, "A Brief Note on Kernig's Sign."

DISCUSSION.

DR. D. L. EDSALL.—I have seen one case which may be added to Dr. Packard's list in which meningitis was proven by autopsy to have been present, and yet Kernig's sign was absent. A child was admitted to my service at St. Christopher's Hospital two years of age with a diagnosis of tubercular meningitis. The case had the usual appearance of this affection, but it ran a protracted course. Kernig's sign was absent every day. The child died about six weeks after coming into the hospital, with signs of acute internal hydrocephalus. The autopsy showed marked internal hydrocephalus and unquestionable tubercular meningitis.

The possible contrary fallacy, that the sign may be present without meningitis, was exemplified by another case, that of a boy of six years, which showed high temperature and violent delirium at first, but afterward ran a typical course of typhoid fever. Kernig's sign was present from the boy's admission to his convalescence and was very marked. He had no other signs of meningitis and even examination of the eye grounds was negative.

DR. ALFRED STENGEL.—I recall two cases of meningitis confirmed by autopsy in which Kernig's sign was absent, and I should also like to state that I have found this sign a number of times in cases which were unquestionably not meningitis, though not confirmed by autopsy, as the patients recovered.

I agree with Dr. Griffith in questioning the admission in a group of cases supposed to present Kernig's sign, of any case in which there was general rigidity of the limbs and therefore stiffness and inability to extend the knee in any position.

DR. MCKEE.—I saw an interesting case last summer in which I think there was unquestionably meningitis with the presence of Kernig's sign. There was a very bad family history; two children had died from hydrocephalus and there had been a number of abortions and miscarriages. The child had been practically well up to the time she was nine months of age, but she was considered decidedly under size. At that time her head commenced to enlarge very decidedly. When I first saw her she was seventeen months old. The mother stated that for some weeks she had had peculiar movements of both arms, and stiffness of the legs. The child also had fever. She was fast becoming blind. She had very curious movements (clonic spasm) of both hands and arms (usually two or three rhythmical movements per second). This fact struck me as being of decided interest since it has been claimed that from the motor cortex we may have from two to four discharges per second. We had her in the Polyclinic Hospital for about eight weeks, and during that time Kernig's sign was present. The more acute symptoms disappeared under specific treatment (rapidly increasing doses of the iodides). Two months after her return to Allentown I had a note from her doctor telling me that she was much better, but he told me nothing definite regarding her symptoms. I believe this was a case of meningitis, probably specific, and almost unquestionably of the cortical type.

DR. PACKARD CLOSES.—I agree with the criticism that it is not fair to call Kernig's sign simple inability to extend the leg on the thigh. Kernig states that if you lay the child down and flex the thigh on the abdomen it can extend the leg; but that if you sit the child up in bed and then flex the thigh on the abdomen it cannot extend the leg, although it could do so when lying down. I have seen during the last year a considerable number of cases of cerebro-spinal meningitis in which Kernig's sign was reversed, that is, the leg could be extended when sitting up and there was inability to extend it when the patient was lying down. There is a man in town with whom I have often talked over Kernig's sign, who has shown me how absolutely impossible it is for him to get his leg anywhere near in line with his thigh when he is sitting up. As soon as he gets beyond a slight degree of extension it at once gives him pain. This man has no meningitis whatever. I would not, however, by any means desire to be

thought to be making light of Kernig's sign. I believe it is a good sign as an aid when other signs are not positive. I believe its absence in infants is easily explained by the condition of normal hypotony in young babies.

The question of particular importance is the fact that the absence of Kernig's sign might possibly make us err in thinking that the case was not one of meningitis, but simply one of meningismus, a diagnosis otherwise often extremely difficult to make.

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ORIGINAL COMMUNICATIONS

OPERATIVE INDICATIONS IN CASES OF FIBROMA COMPLICATED BY PREGNANCY.

DR. H. DELAGENIERE.

It is not uncommon to find pregnancy occurring in a fibromatous uterus. In certain cases it is doubtful whether the pregnancy could even be considered as a complication, for delivery can take place normally. There are numerous factors which have to be considered and which modify the facts of the problem according to their respective importance. Thus a pedunculated fibroma at the neck or at the fundus of the uterus will not interfere with pregnancy. Moreover the volume of the tumor is of the greatest importance. A little interstitial fibroma will usually be unimportant, while a large one will hinder labor.

It is necessary also to consider the seat of the tumor in its relations with the bony pelvis, the point of insertion of the placenta, the age of the foetus, its vitality, its presentation, etc.

It follows that a surgeon called to take charge of a pregnant woman who has a fibroma ought to have clear opinions on the subject, or else he may lose precious time, with the result of death for the foetus, and perhaps for the mother. But to form an opinion it seems to us indispensable to study first the means at our disposal to bring about a good result.

The first idea which occurs is to induce abortion or premature labor, in order to arrest the course of the pregnancy which is the cause of all the trouble, or to terminate it before the occurrence

of accident. In this case the uterus which has been emptied will be in the same condition as before pregnancy; it will always be a fibromatous uterus, exposing the patient to the accidents of ordinary fibromas, although the grave complications of pregnancy will be removed.

Unhappily this simple plan has not given in practice the result which might have been expected. According to Pozzi, out of 147 cases collected by Susserott there was a mortality of 53 per cent for the mothers and of 66 per cent for the children. These figures are certainly exaggerated, for the observations are anterior to 1870, that is to say to the antiseptic era. But out of these 147 cases there were 20 applications of forceps, 20 versions, and 21 artificial deliveries, which gave 33 deaths to the mother and 30 deaths to the foetus, a proportion which certainly would not occur today, when aseptic and antiseptic methods are known and applied. Nevertheless these statistics of Susserott, even when modified and ameliorated, are a crushing argument against the method of abortion or induced labor. Moreover, quite recent statistics (1895) of Kirscheimer, related by Kelly, give a mortality of 40 per cent for the mother in induced labor or abortion. We ought therefore to renounce this method and banish it absolutely. It is considerably more grave for the mother and for the child than the radical operations, such as that of Porro, or total hysterectomy, operations which at first sight might seem more serious.

It would be vain to object that rigorous antiseptic precautions would have given better results. We reply that besides the immediate infectious accidents, there are a variety of accidents impossible to foresee. A low insertion of the placenta (case IV.) may bring on a hæmorrhage, which is very severe or fatal. The same accident is to be feared if the placenta is inserted on the zone occupied by the tumor; after delivery the uterine tissues cannot contract, and hæmorrhage will be terrible. The introduction of the hand to perform version (case I.), or of forceps, to seize the head, may cause the rupture of the womb between two fibroid tumors, by a mechanical effect similar to that which led to the bursting of the uterus in the case of our patient (case I.).

In one word, the patient is exposed to a great number of accidents, foreseen or unforeseen, which ought to make us abandon absolutely the method of delivery by the natural ways.

We should now examine other methods of intervention. Some propose to attack the fibromas directly, so as to permit pregnancy to proceed normally; others permit pregnancy to go as far as possible and then intervene to remove the uterus, wholly or in part, after having delivered the woman through the abdominal incision.

Operation on the Fibroma alone.—These interventions are nothing else than myomectomies, but on account of the numerous varieties of fibromas which may be encountered these myomectomies may differ considerably from each other. We will not insist on the easy and safe ablation of polyps springing from the cervix. The interstitial fibroma of the cervix, which is large enough to hinder labor, will be more difficult to extirpate; nevertheless, its enucleation, if done methodically, will always be innocuous for mother and child.

There remain the Abdominal Myomectomies.—These operations present three varieties which are important to study with regard to the prognosis of the operation:

First—The tumor is pedunculated at the fundus of the uterus. In this case the extirpation, after ligature of the pedicle does not offer any difficulty, and the operation will not be severe.

Second—The tumor is sessile, or implanted broadly (case II.). In these cases enucleation requires long manipulations, ligatures, complicated and careful sutures; it involves risk of wounding the ovum; in a word, by its complicated technique, it subjects the patient to great risks of infection, and the fœtus to great risks of abortion.

Third—The tumor is included in the broad ligament. In this case the age of the pregnancy is of importance as a new factor from the point of view of the technique. In the early months when the uterus is small in volume, easy to move and to bring outside through the abdominal wound, the enucleation of the intra-ligamentary fibroma is easy; the operation is simple and consequently not serious. But if the uterus has acquired a considerable volume, after the sixth or seventh month, the operation will be much more difficult, more complicated, and correspondingly more severe for the mother, who is subjected to more risk of infection, and, also for the fœtus, which will be more exposed to abortion on account of the prolonged manipulations and traumas of the gravid uterus.

It follows from the facts set forth that abdominal myomectomy will only be the operation of election in cases of pedunculated fibromas attached to the fundus and of intra-ligamentary fibromas in the first months of pregnancy. In the first case the mortality will be 18.8 per cent according to Kirscheimer. In the second, the operation does not appear to be particularly serious, since of the three cases only which we know of (cases of Guiard, Frommel and of Taylor) there were three recoveries with continuation of the pregnancy.

Operations on the Uterus.—The object of these is to deliver the woman and at the same time to remove the uterus. It is the radical method. If the child is living and viable, the operation is complicated by Cæsarian section, while if the infant is dead or not viable it will be a simple supra-vaginal hysterectomy, or a total hysterectomy; leaving the Cæsarian section out of account we should regard it as an operation for uterine fibroma.

First—Supra-vaginal hysterectomy with exterior pedicle, or if there is a Cæsarian section the operation of Porro (case V.). But this method exposes the patient to the dangers of the pedicle. It is applicable with difficulty in the case of fibromas situated at the level of the lower segment.

Second—Supra-vaginal hysterectomy after or without Cæsarian section. This operation is in effect only a modification of total hysterectomy, which is adopted when it is not desirable to open the vagina, which is more or less infected.

Third—Total hysterectomy, which has the advantage of removing the entire cervix.

These three radical procedures may be considered together, although the two last deserve the preference. The mortality in total or supra-vaginal hysterectomy in the pregnant woman does not seem to be higher than in the ordinary Cæsarian operation, in cases where the uterus can be left in place. In 1894, Stavelly collected 17 cases operated since 1889, with a mortality for the mother of only 11.75 per cent. This figure has a certain eloquence if it is compared with the 40 per cent of deaths in cases where labor or abortion are induced, and it seems to us that it ought to carry conviction.

The first practical difficulty which presents itself when a case of uterine fibroma complicated by pregnancy is observed is to dis-

criminate between the varieties of cases and to know whether to advise abstention from any surgical intervention, or, on the contrary, to establish the indications for one operation or another.

Two lives are at stake, and the physician cannot be too sagacious. We will explain our method of procedure. We have sufficiently proved the inferiority, from all points of view, of induced abortion and labor, so that we shall not say more about it; *it should not be employed in any case whatever.* The first question which we have to decide is the following:

Should we wait, watch the patient, and let the pregnancy go to term? If the pregnancy, whatever its age, presents nothing abnormal in its course; if the fibromas are small; or if, indeed, when they are of a medium or even of a considerable size, they are situated at the zone where they can be tolerated, such as the fundus of the uterus; in a word, if pregnancy and labor seem to us likely to go on normally, we do not hesitate to advise against any intervention, and to let the pregnancy proceed, being ready to intervene in case of unforeseen accident.

What then are the accidents which demand surgical interference? In order of frequency we will specify pains, sometimes very violent, which are occasioned by pressure on the pelvic organs by the tumor, especially when it is incarcerated in the small pelvis. Compression of the ureters and the bladder, or of the rectum when the tumor is in the lower part of the uterus, are absolute indications. The same is true of the accidents which may happen to the foetus, hæmorrhage by low insertion of the placenta, apoplexy of the placenta inducing sickness, death of the foetus, etc.

Having decided on interference, when ought we to attack the tumor alone in order to permit the evolution of pregnancy? Fibromas of the neck bulging into the vagina, whether they are pediculated or sessile, can be removed without danger for the mother or for the foetus. They should then be removed whenever they are found.

If the fibromas grow towards the abdomen the surgeon should be more careful, and first he will consider the number of the fibromas. It is evident that in the case of a uterus studded with tumors the conservative method should be rejected. It is indicated, on the contrary, in the case of a solitary fibroma, when the latter can be removed anotomically without modifying

the vitality of the uterus or endangering the ovum. Kelly has removed with complete success four sessile fibromas in the course of pregnancy; but this operation is serious, as is shown by our case II. In such cases total ablation is more logical.

If the fibroma is removed, when should the uterus also be taken away? The uterus ought to be sacrificed in all the cases in which interference is necessary, and which are not included in one of the preceding categories. We will enumerate the principal classes of cases:

When the uterus is filled with fibromas, the evolution of which has already compromised the course of pregnancy, we ought not to hesitate to remove it. In these cases labor will take place under abnormal conditions involving the greatest risks for mother and child. Even if delivery has been happily accomplished the mother will be again exposed to the same accidents, in case she becomes pregnant again, which is possible.

The death of the foetus or even the impairment of its vitality will be an absolute indication, especially when the fibroid tumor, being situated in the inferior segment, will hinder the expulsion of the dead foetus, thus exposing the mother to auto-infection (case III.).

Finally, and especially, laparotomy must be performed whenever the child is living and viable. In acting thus the child will be surely preserved, without making the mother run a greater risk than in a normal delivery by the natural passages (case IV.). There is moreover the possibility of resorting to simple enucleation of the fibroma, after the Cæsarian section, if circumstances permit it.

Finally, the presence of malignant tumors as a complication is a definite indication for the total removal of the organ.

When the uterus ought to be sacrificed, what is the method of election? Three operations will give the desired result: These are Porro's operation, supra-vaginal hysterectomy and total abdominal hysterectomy. We have not even mentioned vaginal hysterectomy for it does not seem to us to be indicated in any case, not even if the fibroma is small and the pregnancy of three or four months' duration. There are two principal reasons for this: the first is that any conservative operation would be entirely impossible, while laparotomy, by permitting an exact exploration, renders conservative surgery possible; the second is that va-

ginal hysterectomy exposes the woman to severe hæmorrhages, by inducing a separation of the placenta during the first part of the operation, especially if the fibromas are situated in the inferior segment.

Porro's operation, although we have employed it with full success (case V.), seems to us much inferior to total hysterectomy, or to supra-vaginal hysterectomy. If, as in our cases, the fibromas are in the inferior segment Porro's operation may oblige us to leave them in place. Finally, it exposes the patient to all the dangers of exterior pedicles.

We do not hesitate then to give the preference to the two other methods which have the same respective indications, as in all cases when it is necessary to remove the uterus. If the vaginal vault can be left in place without inconvenience, that method of operation should be preferred which offers the advantages of simplifying the operation, of reducing to a minimum the chances of infection from the vagina and which afterwards leaves the woman a normal vagina. But the vaginal vault, with a small segment of the cervix, cannot always be left in place safely, when for example this portion of the cervix is infected, or only suspected, as will be the case if the patient has undergone several examinations, if labor has been in progress for a considerable time, and especially if the bag of waters has been broken. In these conditions total abdominal hysterectomy ought to be performed without hesitation.

Case I. Rupture of a fibromatous uterus during version; total abdominal hysterectomy; death. Marguerite R., 24 years old, seven months pregnant, had the first symptoms of labor the morning of May 12th, 1897. In spite of rest in bed the symptoms increased, the cervix opened, but, although the foetus was small, it did not engage. The bag of waters broke during the day and the physicians present found that there was a presentation of the left flank. Six P.M., an anesthetic was administered and version performed with all the habitual precautions. The infant extracted was small, already dead for some days. The placenta was delivered by expression and everything seemed in order. Nevertheless, on examination it seemed that membranes could be felt; gentle traction was used, but as they resisted it was

considered sufficient to put a dressing on the vulva to avoid infection.

Next morning the pulse is small; there has been frequent vomiting during the night, the abdomen is painful and tympanitic. Little blood has escaped in the dressing, but on examining the membranes it was perceived that they consisted of a fringe of omentum engaged in a wide rupture of the uterus.

Considering the symptoms of peritoneal infection an immediate laparotomy followed by the extirpation of the ruptured uterus was advised. The patient was transported to the clinic during the day, and she was operated on as soon as she arrived.

Operation, May 13th, 4 P.M., about 22 hours after the rupture of the uterus.

The vagina and the abdominal wall were disinfected with the greatest care. I was assisted by my confreres, Drs. Mellission and Vincent, and by my assistant, Dr. Meyer.

On opening the abdomen a scanty sanguineous liquid was found bathing the coils of intestines. The omentum was bluish slate-colored; in its thickness thrombosed veins were seen, appearing as if injected with coagulable matter. The thromboses in the veins reached as far as the stomach.

Following the omentum we reached, on the left, a little towards the anterior surface of the uterus, a rupture which had opened the vesico-uterine cul-de-sac for a space of about four centimetres. It is through this crack in the peritoneum that the omentum passed.

The uterus is voluminous and presents two interstitial fibrous tumors, of small size and seated at the fundus. It was between the two provinces formed by these tumors that the rupture ran. The omentum was resected as high as possible, and tied with silk in four or five sections. The peritoneal cavity was thoroughly washed with sterilized water; then the uterus was removed by our usual procedure, leaving a cuff of peritoneum. The cavity of Douglas was drained by means of a Mikulicz tampon, and the abdomen was closed as usual. The operation lasted about an hour. The patient did very well for three days, when the Mikulicz was removed and replaced by a drain; on the fourth day the temperature was slightly raised, and there was some

oedema on the calf of the leg; on the fifth day there was oedema of both lower limbs, especially of the left leg and labium majus; in the night there was agitation and delirium, which increased during the next two days; the temperature rose to 39° and the patient died at two A. M. of the eighth day. Death appears to have been caused by an infection of slow progress which had commenced before the operation.

Case II. Woman of 36 years, primipara, pregnant three months, presenting an interstitial fibroma in the right cornu of the uterus. This fibroma causes symptoms of compression and of auto-intoxication.

January 21st, 1899. Abdominal myomectomy by enucleation of the tumor, which weighs 875 grammes. There was persistence of the symptoms of intoxication, and death on the ninth day.

Case III. Fibro-myoma of the lower segment. Dystocia. Death of the foetus. Consecutive septicemia. Total abdominal hysterectomy. Recovery. Victorine D., V-para, 37 years old; is in a deplorable condition; has been suffering about eight months; she then first experienced pains in the abdomen and was seized with an abundant uterine hemorrhage which she took for her menstruation. The bleeding was arrested, but reappeared some days later. Since that time she lost blood on various occasions, especially when excessively fatigued or when she had been long standing. Her general condition was altered; she lost her strength and could no longer take nourishment; in the evening she had fever. Finally a fortnight ago she was seized with an unusual hemorrhage and consulted Dr. Peltier, who made a diagnosis of septicemia, depending on the growth of a uterine fibroid, which was being eliminated. Conditions before the operation. The general condition is deplorable; there is an evening fever of $38\frac{1}{2}^{\circ}\text{C}$ to 39°C . The pulse is small, contractions of the heart feeble. Lungs and urine normal; the abdomen is distended by an irregular voluminous tumor which extends four fingers' length above the umbilicus.

This tumor has a variable consistency in different points, very hard in certain places, it is almost fluctuating in others. To the touch the cervix is soft, patulous, voluminous. The finger can

be introduced a certain distance when a hard, immovable mass is felt. The rest of the tumor appears to be above it.

In regard to possible pregnancy the patient cannot furnish any information, on account of her continual hemorrhages. The speculum shows an enormous cervix, from which runs a discharge which is not fetid, but contains broken down blood clots.

Preparation of the patient.—The vagina is cleansed with care and swabbed with iodoformized ether; a long strip of iodoform gauze is introduced in order to plug it. Finally the vagina is distended with gauze.

Operation November 9, 1899. The patient is etherized and placed on an inclined plane. I made a long incision extending beyond the umbilicus. The abdominal wall is thin, being only skin and peritoneum.

The tumor is irregular, bilobed. The lower lobe, which is very hard, is wedged in the pelvis. The upper lobe, on the contrary, seemed fluctuating. With strong traction forceps the upper lobe is seized and the tumor brought outside the abdomen. The broad ligaments are divided on each side between clamps, the points of which reach to the uterine border. Incision of the peritoneum from the point of one clamp to that of the other forming a cuff of peritoneum convex in front above the bladder and concave behind, towards the pouch of Douglas. The peritoneum is dissected rapidly for much blood is escaping. To arrest the hemorrhage I have to pass an elastic ligature around the base of the tumor. This permits me to remove the principal mass before continuing the operation. The stump is seized with two double tenacula, and the cervix is isolated to the vagina, which is opened and the cervix excised.

Hemostasis is easily accomplished. A ligature is placed on each side, including what is held by the clamps. Another ligature is placed on each side to secure the uterine artery. The vagina is united to the peritoneal cuff by two or three sutures in front and behind. Finally the cuff is united as usual by two continuous sutures, meeting in the middle. The peritoneum is cleaned. A drain is placed in the cavity of Douglas. The abdominal wall is sutured in two layers. Duration of whole operation, 1 hour, 20 minutes.

The tumor was composed of two large parts connected by an isthmus. It weighed 2,300 grammes. The cervix is voluminous, situated low down and behind and hidden by the lower mass of the tumor. This lower mass is formed by a fibroid larger than a fetal head, which seems to be developed in the anterior wall of the uterus and in the upper part of the anterior wall of the cervix. It was wedged in the pelvis, which it filled entirely, pushing the cervix uteri downward.

Above the tumor is the uterine cavity twice as large as the fibroid tumor. Its walls are about 25 millimetres thick, and it contains a foetus, a placenta, and a considerable quantity of black coagulated blood. The foetus of about four months lies among black blood clots; it has no odor, but shows signs of maceration; the epidermis rubs off readily in strips. The large placenta is separated from the uterine wall by a collection of black blood clots, and black viscous fluid.

Except for a phlebitis the convalescence was uninterrupted, and the patient left the hospital perfectly cured December 16.

Case IV. Woman of 40 years, primipara; during her pregnancy has shown signs of placenta praevia. At term, labor does not take place, the foetus died, and at the end of 12 days the patient is attacked with severe hemorrhage, requiring tamponment of vagina. We apply the inflated ball of Champetier de Riles in the cervix to arrest the hemorrhage. Then two hours later we apply forceps and terminate labor.

The patient loses enormous amounts of blood. She loses consciousness at the end of labor, and only comes to herself after the hypodermic injection of 1,500 grammes of serum.

Convalescence is normal, but the patient becomes pregnant again, and our friend, Dr. Lepage, of Paris, in August, 1899, performs Porro's operation with complete success for mother and child.

Case V. Case of dystocia caused by uterine fibroma wedged in the pelvis. Porro's operation. Living child. Recovery.

J. S., aged 38, has had two miscarriages, the first at 3½ months, the second at 2 months. The third pregnancy, owing to great care, goes on to term. Labor commenced, but the head did not engage. The attending physician, Dr. Ledrain, attempted to

apply forceps, but was prevented by a large fibroid tumor which blocked the pelvis. The next day, January 20, 1891, the child being alive, I opened the abdomen and placed compresses all around the incision. The anterior surface of the uterus was bulging. A median incision penetrates at once the uterine cavity. The placenta is wounded and hemorrhage is abundant.

I divide the placenta rapidly and seize the child. I remove it through the abdominal incision. I cut the cord, give the child to the nurse and then detach the placenta and the membranes. The blood continues to flow freely, and to arrest this dangerous hemorrhage I pack the uterine cavity with compresses.

Hemorrhage ceases, I cleanse the field of operation; not a drop of blood or liquid has entered the abdomen. Then I examine the tumor, which had been felt through the vagina. My first thought is to remove it with the uterus by Porro's operation, but I perceive that it is developed very low down in the posterior surface of the uterus and even of the cervix, and that it is impossible to bring it out through the abdominal wound. I then decide to disengage the tumor as far as possible and to amputate the uterus below, with the ovaries.

I try to remove the compresses from the uterine cavity, but the hemorrhage recurs. So I leave them where they are and place a temporary constrictor of caoutchouc around the tumor. I tie off the ovaries and broad ligaments on each side with interlocking sutures, then thrust two pins at right angles to each other through the pedicle and the compresses. Then I place a caoutchouc constrictor twice around the pedicle, between the pins. The whole fundus of the uterus is then amputated by a circular incision and most of the compresses are removed from the uterine cavity. One or two have been pierced by the pins and cannot be removed. The parietal peritoneum is united as exactly as possible above and below the pedicle. Then the skin is united with silkworm gut. The pedicle is trimmed and cauterized vigorously with the thermo-cautery, carbonizing the compresses, which are in the centre of the pedicle. Duration of operation $1\frac{1}{4}$ hours. The section of the uterus was just above the fibroid tumor, which has been brought out of the pelvis and fixed to the abdominal wall.

The convalescence was uninterrupted. Temperature never above 37.5°C , except once, when it reached 38.5°C , January 21st. On January 31 I removed a compress from the vagina. On February 4 the pedicle came away, and in detaching it the compress was removed, which had been transfixed by the pin. February 7 the patient was entirely cured, and both she and the child have since then been in excellent health.

Mans, France.

SELECTED ARTICLES.

USES OF THE NORMAL SALINE SOLUTION.*

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Since the introduction of the saline solution a few years ago, many lives have been prolonged and not a few saved by its use. I do not believe, however, that its value is fully appreciated. Surgery and medicine have been aided in saving life by its use, and obstetrics is no less a debtor to this agent. The uses are numerous; and to go into detail in each class would prolong this paper more than I wish.

Shock and Hemorrhage.—As the symptoms of shock and hemorrhage are similar in many cases, I will treat of both under one heading. For shock, whether it be due to an impression made upon the nervous system, as from a blow; or to a local vaso-dilatation of large blood-vessels, as in the abdomen; to direct external hemorrhage or to a penetrating wound of the abdomen, there is no treatment so effective or so prompt as the infusion of the normal saline solution. The method to be used must be governed by the demands of the individual case. I have seen its beneficial effect in shock from chloroform. Intra-venous infusion

*Read before the Tri-State Medical Association of the Carolinas and Virginia, held at Charleston, S. C., Feb. 20, 21, 22, 1900.

was resorted to immediately, and a life was saved that would have otherwise probably been lost.

Surgical shock may be prevented or lessened in degree by giving the solution in the rectum or under the skin before the operation. If severe shock supervenes, the infusion can be put into the veins, and this will often enable us to complete an operation which would be too hazardous to continue without its use.

During operations the time to resort to the infusion should be determined by the anesthetizer, who is supposed to be watching the condition of the patient. The solution should be used before the shock becomes profound, which might be the case if this matter is left to the operator. The post-operative rectal injection of this solution is valuable in aiding reaction from operations and also in relieving the intense thirst which so often follows.

When used for hemorrhage it fills depleted vessels and stimulates them to physiological action, and through them the heart and brain are supplied with the proper stimulus. A very short time is required, less than a minute, for the fluid to reach every part of the anatomy. In this connection there is an important point to remember, viz.: ligate when possible any ruptured vessel as early as you can reach it, or the solution will make its escape, and your effort to do good may be futile. I have seen this illustrated in injuries of the skull and brain, in penetrating abdominal wounds, and in other injuries. Often it is impossible to reach the injured vessels at once, and when this is the case you must use the solution while looking for the vessel.

Sepsis.—In sepsis from any source, good arises from the early use of the saline solution, and even in late cases, marked improvement often follows. To relate its value in surgical sepsis, I know of no better way than to cite examples of its good results. One case I recall of profound sepsis following an operation for double pyo-salpinx. For a week her temperature ranged from 104 to 106° F. After resorting to all measures that occurred to me, I tried the rectal injection of a pint of saline solution, and repeated it every four hours. There was a fall in the temperature to 100° F. within twenty-four hours. The enematas were continued until the acute symptoms had abated and the patient was well on the road to recovery.

Another case was one of localized suppurative peritonitis; the abdomen had been opened and drained, yet the pulse remained

rapid and the temperature high. The salines were used as in the former case with perfect elimination of the poison and the recovery of the patient.

A few days ago I saw a very marked benefit from the intravenous infusion. The patient had suffered from a rectal stricture for some years, and had learned to use the rectal bougie herself. By some means the bowel was ruptured and septic peritonitis supervened. As a *dernier resort*, and the only one we had, an operation was performed for her relief. Her condition was critical; the pulse had left the radial arteries, her body was covered with a cold, clammy sweat; in fact, all the symptoms of impending dissolution. Chloroform was administered and the infusion commenced. In a very short time her skin dried, the pulse returned to the wrist, color to the face, and she was in a much better condition than when we commenced the operation. Without the use of the saline I do not think she would have stood for one hour the shock of handling the bowels and that of the chloroform.

In puerperal sepsis, the results obtained are as certain, prompt and effective as in surgical sepsis. Unless the source of the infection be removed, in either case the benefit, however derived, may be only temporary. We can certainly in both diminish the intensity of the infection until more radical measures can be utilized.

Renal Insufficiency.—Lavage of the blood with the saline solution in that condition known as uræmia has been successfully used so often that there is no dispute as to its value, nor of the fact that it has saved lives that seemed hopelessly ill. Beginning in the early stages of uræmia, we can do much to prevent any permanent damage being done to the kidneys. Here the rectal injection will often suffice to obtain the desired results. In the majority of cases, however, we do not see these cases until the kidneys have ceased to act well and the urea is retained in the system in large quantities, as well as the other toxic elements that go to make up that condition of uræmia.

A case seen by me had had one convulsion when I was called. I ordered the saline enematas every four hours. She had no convulsions for several days, and discontinued the salines without consulting me. She was taken with convulsions within the day that the salines were discontinued, and had nine before I saw her.

I gave her chloroform to control the convulsions for the time and then began the salines again, with no return of the convulsions. These were kept up until the skin and kidneys were acting well. The patient was delivered in two months, full term, without any complications before, during or after labor.

In another case the uræmic symptoms presented themselves early in pregnancy. Various remedies were used and the uræmic symptoms increased. I now resorted to the salines, with the result of increasing the amount of urine excreted, diminishing the swelling of the patient's body, and increasing the elimination, both relatively and actually, of the urea. The salines had to be resorted to often before labor, for as soon as they were discontinued the uræmic symptoms increased.

In puerperal convulsions, when the pulse is full and bounding, I think the best treatment is to bleed the patient and then fill the vessels with the saline solution. It has been advised to bleed from one arm and to infuse into the other at the same time.

I think I have saved the life of a young lady this month by simply using a pint of water and a teaspoonful of salt every four hours by enema. The young lady had measles a few weeks before, and by exposing herself developed pneumonia. All went well until her kidneys became inactive and her system became charged with the poison that should have been eliminated by the lungs and kidneys. Her face was livid. Her pulse was 160 and her temperature was 105.2° F. This was her condition when I was sent for to see her in consultation. Acting upon my advice, we gave her the saline as above stated, except we repeated the saline in one hour after giving the first enema. I saw her again in the afternoon and found that her kidneys had acted well and her pulse had come down to 130. She expressed herself as feeling better, and she looked better. As this patient was at school some distance from Richmond, I have not seen her since, but her nurse reports the patient recovering. Her temperature and pulse are normal and the kidneys are acting well. I am almost sure this patient would have died had it not been for the saline, as her condition was critical when I first saw her. No medicines were given her after my first visit except strychnia and whiskey. We must, therefore, give the saline solution the credit of doing the good that was accomplished.

In diabetic coma the solution has been used, and has acted suf-

ficiently to relieve the coma so that the patient could attend to business for a short time. This was followed by the immediate return of the coma when the saline was stopped.

I have seen this agent do good in the crisis of pneumonia, especially in the aged, when the patient was suffering from the depression following the fall in temperature and the profuse sweating.

A note of warning has been sounded in regard to the use of salines in organic diseases of the kidneys, particularly in old cases. Opinions differ as to the advisability of their use in these cases.

Typhoid Fever.—I have seen the patient suffering from hemorrhage into the intestines in typhoid fever improve under the infusion of the solution into the cellular tissue of the thigh. The pulse increased in volume and became slower, the respirations became more natural, the color returned to the lips, the skin became dry and the temperature returned to normal. By this means, then, we may tide the patient over the shock of hemorrhage until the bleeding points become plugged. I saw this beautifully illustrated last year in the case of a soldier who had typhoid fever in Santiago. He had returned home to recuperate. The day after his arrival he was taken with a severe hemorrhage from the bowels; such a quantity of blood was lost that he was more dead than alive when I saw him. An aspirating needle from my pocket case, a dirty syringe that had been used in the house, and muddy James river water with a teaspoonful of salt gotten from the dining table furnished the solution and instruments for the infusion under the skin. So profound was the shock that the patient did not feel the first infusion of a pint. In an hour another pint was administered near the site of the first. The patient rallied well, had no further hemorrhages and made a complete recovery.

As everything used was on this occasion conducive to sepsis, I was not surprised to find an abscess in the thigh where the infusion was given. This was a small matter in comparison with the other condition which demanded treatment. I report this to show that we can use the saline solution without having things sterile in emergency cases, when it is a life and death matter in a few minutes. Had we waited for sterilized material in this case I do not think we would have had a patient to treat.

• Another time to use the saline solution in typhoid fever is

when perforation of the intestine has occurred and the patient is much shocked. Here you wish to sustain the patient until time is afforded to prepare for the operation of suturing the rupture. I have seen its beneficial effect in these cases several times.

This solution is also valuable in typhoid fever when we wish to eliminate the poison more rapidly, when the temperature is high and the nervous system is excited. I have seen it act better than the sponge bath for this purpose. It is always my custom to use the solution in these cases, as well as in all conditions of ptomaine poisoning. Its value here suggests the belief that it should do good in any condition where the blood has become charged with poison from any source.

TECHNIQUE.—The apparatus necessary for the direct intravenous infusion is simple, and should always be at hand. A fountain syringe and a common eye dropper will be all that is necessary. There are special tubes for introduction into the veins, but I doubt that they have any advantage over the dropper, and certainly not if you have a ridge filed around the end of the dropper for the suture to hold by. The tube is held in the vein by a ligature being thrown around the vein and tube and then tied. When introducing the tube the solution should be allowed to run until the water is hot, and the solution to continue to flow while introducing the tube into the vein to prevent air getting into the circulation. The vessel usually selected is the median basilic or cephalic at the bend of the elbow. I think the left arm should be selected. For subcutaneous (hypodermoclysis) infusions, the fountain syringe, with an aspirating needle, is all that is required. The solution may be infused into the sub-mammary or thigh tissue, using gentle massage to hasten absorption. It is hardly necessary for me to say that the salt, the solution and all instruments, as well as the hands of the operator and assistants, should be rendered aseptic; this is equally true of the field of operation. For the rectal injection (enteroclysis), we need only a syringe with a rectal nozzle and the solution. Nothing requires sterilization. It is a ready method, both in the most rural district and the metropolitan hospital; consequently no one is excusable for not having used this life-saving agent.

THE SOLUTION.—We generally accept that the solution consists of 105 grains of salt dissolved in 30 ounces of water, both sterilized. For all practical purposes, one teaspoonful of salt to one

pint of water will be near enough the correct strength. The temperature of the solution should be about 110° F., so that it will be near the temperature of the body by the time it passes through the tubing. A lower temperature will do harm, as the patient will have to raise the temperature of the solution to that of the body heat. A higher temperature will do harm by producing a necrosis of the tissue at the site of introduction. I have seen a large slough of the mammary gland from this cause.

The force used for the intra-venous method should be that of holding the bag about three feet above the patient's body. The quantity of the solution to be used will depend upon the effect upon the patient, usually from a pint and a half to a quart. I have used three quarts in the veins, and others have used a like quantity. Under the skin any quantity may be used that you can insert. You can infuse in more than one locality, so that absorption will go on more rapidly. Do not infuse in the veins too rapidly; about an ounce a minute will be fast enough.—*Richmond Journal of Practice*.

THE BACTERIOLOGY OF GONOCOCCUS INFECTIONS.

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Accurate knowledge concerning the pathogenic agent concerned in gonorrhœal infections dates from 1879, when Neisser reported, in a clear and precise manner, the discovery of a peculiar micrococcus found in large numbers in urethral gonorrhœa. To this micrococcus he gave the name of the gonococcus. This work of Neisser was followed by numerous publications which in the main confirmed his observations. Among this number may be mentioned those of Bokai, Finkelstein, Watson-Cheyne and Haab. The etiological importance of the gonococcus was, however, denied by some, and it was not until Bumm in 1886 reproduced the disease by inoculation of the healthy human

urethra with pure cultures of the gonococcus that its specificity was established beyond a doubt. As a result of the careful work of many observers, the gonococcus is today one of the best known of the pathogenic microorganisms.

The gonococcus usually occurs in pairs, the individual coccus having the shape of a coffee grain or biscuit, and hence the name of biscuit shaped diplococci. The size of the gonococcus appears to vary somewhat according as the medium upon which it is grown and the conditions under which it is grown are favorable or unfavorable.

One of the characteristics of the gonococcus when present in pus, and especially in urethral pus, is its location inside the cells. Of course many gonococci will also be found outside the cells, but the characteristic situation is intracellular. When seen extracellular, the gonococci have a tendency to occur in definite groups, and this is often the result of the degeneration of the cell which originally contained them. It is today generally agreed that the gonococcus is but rarely found inside the nuclei of cells. It is also agreed by most observers that the gonococcus is found only in cells capable of phagocytic action, and that the gonococcus does not actively penetrate the cells.

The gonococcus stains readily with all the basic aniline dyes, and is as readily decolorized by alcohol, ether and the usual decolorizing agents. It also decolorizes rapidly by Gram's method.

In 1886 Bumm first succeeded in cultivating the gonococcus in pure culture. The essential feature of the culture medium used by Bumm was the presence of human blood serum, and upon such a medium he was able to obtain pure cultures which could be kept alive for several generations.

Wertheim modified the culture medium by using a combination of agar-agar and human blood serum, and in this way obtained more constant and satisfactory results than with Bumm's method.

Finger was the first to introduce a culture medium composed of agar-agar and acid urine, and upon such a medium he succeeded in growing the gonococcus.

Numerous experimenters have attempted to substitute serous exudates, ascitic and cystic fluids for the human blood serum, once considered absolutely necessary, and with considerable success.

Young of Baltimore recommends a culture medium which is easily prepared and very satisfactory. The human albumen, which is absolutely necessary for the growth of the gonococcus, is obtained from ascitic or hydrocele fluid which can be collected sterile. Ordinary agar-agar is sterilized and while still in a liquid state is put in a water bath at 55°C . To the sterile agar tubes, the sterile hydrocele or ascitic fluid is added in the proportion of one part of the fluid to two of agar. The tubes are then slanted and allowed to harden and the medium is ready for use. Upon a suitable medium, colonies of the gonococcus develop in from twenty-four to forty-eight hours. The colonies are rather small, develop both on the surface and in the depths of the medium, and are usually thin and transparent.

For its best development, the gonococcus demands a medium that is slightly alkaline. It will, however, sometimes grow upon a neutral or slightly acid medium. The gonococcus does not, however, grow upon any of the culture media commonly employed for the study of bacteria, nor does it grow at the ordinary room temperature. There is a slight development at from 25° to 30°C ., but the most favorable temperature appears to be from 35° to 37°C . The development is much impaired at a temperature of 38°C ., and at 39° or 40°C . the gonococcus dies in a few hours. The gonococcus is thus very sensitive to variations in the temperature, and especially to high temperatures. Under the most favorable conditions, the cultures survive but a short time, rarely more than five or six days.

The gonococcus is very susceptible to desiccation, and when dried, rapidly loses its virulence. Diluted with water, it loses its virulence in about five hours.

Many experiments have been made to determine the effect of antiseptics upon the gonococcus, and to most of these it is very susceptible. Steinschneider and Schæffer have shown experimentally that the silver salts have a more marked bactericidal action upon the gonococcus than do the other ordinary antiseptics.

Contrary to the idea generally held, the urine of patients who have taken copaiba, santal oil or sodium salicylate has no bactericidal action upon the gonococcus. On the other hand, the urine of individuals who have taken potassium iodide appears to have some bactericidal action upon the gonococcus.

Through the work of Wassermann, Christmas, Schæffer and Nicolaysen, it has been definitely proven that the gonococcus produces a toxine; whether this toxine is extra-bacterial, that is, present in the fluid media, or whether it resides only in the gonococcus and is released by destruction of the latter, has not been definitely proven. A gonorrhœal infection does not render an individual immune to a subsequent infection with the gonococcus.

The specificity of the gonorrhœal infections had been determined by experimental inoculations long before the question of the micro-organisms concerned arose.

Since the discovery and cultivation of the gonococcus, many experimental inoculations of the healthy human urethra with pure cultures of the gonococcus have been made. In a great majority of these cases a perfectly typical gonorrhœa has developed which differed in no way from ordinary gonorrhœa, and from which again the gonococci were obtained in pure culture.

It is definitely proven that a small quantity of pus containing gonococci, inoculated upon a susceptible mucous membrane, is capable of setting up a gonorrhœal infection. The specificity of the gonococcus as the cause of gonorrhœa has thus been proven beyond a doubt.

In no instance has an attempt to produce gonorrhœa in animals, by the inoculation of gonococci into the urethra, been successful. Wertheim succeeded in producing a peritonitis in white mice and guinea pigs by introducing into the peritoneal cavity a piece of serum agar along with the gonococci. Mortschanoff has produced marked lesions of the central nervous system of white mice, rabbits and guinea pigs by the injection of the toxins produced by the gonococcus. Other attempts to produce lesions in animals by means of inoculations with the gonococcus have failed. It is this insusceptibility of animals to the gonorrhœal infections that has rendered the experimental study of the gonococcus so difficult.

The genital organs possess a very varied bacterial flora, and this flora has much importance, for on the one hand it is concerned in the complications and sequellæ of gonorrhœa, and on the other hand it has to do with affections that may resemble gonorrhœa.

Some consideration, then, of the normal and pathogenic

bacteria of the urethra, aside from the gonococcus is of importance.

Following Marcel Seé, one may in brief say:

(1) The anterior urethra normally contains bacteria. These are more numerous about the meatus than further back in the urethra.

(2) The bacteria normally present in the urethra are not pathogenic, but the increase of some of them in certain cases of urethritis may indicate that they play a role in certain urethral affections, and at times they may possess an increased virulence.

(3) In a normal urethra one never finds the gonococcus, and thus it cannot be considered a normal member of the urethral flora.

(4) Strictly speaking, pseudo-gonococci do not occur in the urethra. Practically the only point of resemblance between the so-called pseudo-gonococcus and the gonococcus is that of form. None of the so-called pseudo-gonococci decolorize by Gram's method, while the gonococcus does.

Then too, the arrangement and grouping of the pseudo-gonococci differs from that assumed by the gonococcus.

The gonorrhœal infection may remain localized at the original point of infection, in which case it would be simple or uncomplicated. It may, however, give rise to complications, and these are of a very varied character. These complications may develop as a result of direct inoculation of the pus into another organ or part. They may also result from the extension of the original focus, either by contiguity or by continuity, and finally they may result from the passage of the pathogenic agent into the general circulation, and thus distant foci of disease are produced which are called metastases.

For a long time coitus was believed to be the only means by which a gonorrhœal infection could be acquired, that is, the theory of direct contagion. Today we know that an infection with the gonococcus may also occur through what is known as indirect contagion, in which soiled linen, toilet articles, etc., are recognized as the carriers of the contagion.

The gonococcus may gain a foothold upon any of the epithelial surfaces, with the exception of those provided with a horny layer. The gonococci at first proliferate rapidly upon the surface of the epithelium, and presently begin to work their way in be-

tween the epithelial cells, and here and there they may be found developing in clumps. In the meantime there has occurred a marked reaction on the part of the surrounding tissues which manifests itself in an accumulation of leucocytes in the epithelial and sub-epithelial tissues, as well as upon the surface of the epithelium.

The invasion of the gonococci is in general of a superficial character, and only slowly do they tend to make their way into the deeper tissues. The mode of progression of the gonococci in the tissues is somewhat peculiar, in that they make their way along the inter-cellular or lymphatic spaces and do not cause as marked destruction of tissue as do the ordinary pus cocci. The gonococci may eventually make their way into the sub-epithelial connective tissue, where they often occur in clumps.

Gonorrhœal urethritis in the male is usually limited to the anterior portion of the urethra. The incubation period is usually from three to five days. The infection begins with a mucous secretion from the urethra, in which polygonal cells of the stratified epithelium of the urethra predominate, associated with a few leucocytes. The gonococci are numerous; most of them are free, while some adhere to the cells, and some are already intracellular. As the process advances, the secretion becomes mucopurulent in character, the epithelial cells are less numerous, while the leucocytes are much more numerous; the gonococci are also very numerous and most of them are contained in leucocytes. At the acme of the urethritis, the secretion is composed almost exclusively of leucocytes, many of which contain gonococci. During the decline of the infection, the secretion becomes more fluid. There are still numerous leucocytes present, many of which contain gonococci; the epithelial cells have reappeared in the secretion, and many of them are of a polygonal character. Finally, in the terminal stage, the polygonal cells are very numerous, while the leucocytes and the gonococci are present only in small number.

In chronic urethritis, the process is characterized by a chronic inflammation of the sub-epithelial tissues, with a tendency to contraction. The surface epithelium, as well as the epithelium of the glands of the urethra may be much modified by an infiltration of round cells.

When the gonococcus takes possession of the urethra, the

other bacteria usually present seem to disappear, to reappear later when the virulence of the gonococcus has become lessened. In certain instances the gonorrhœa may be complicated by a secondary infection with other bacteria, and among these the bacillus coli communis is especially to be mentioned.

Neusser, Epstein, Zeleneff and Finger have shown that many of the leucocytes present in gonorrhœal pus are of the eosinophilic variety, while the remainder are poly-morphonuclear neutrophils.

When the gonococcus passes beyond the anterior urethra, it gives rise to complications. Posterior urethritis is a complication due to an extension by continuity. By a further extension of the process the gonococcus may cause an inflammation of the cord, the epididymis or the testicle. By extension by contiguity the gonococcus may give rise to a peri-urethral abscess, a vesiculitis or a prostatitis.

Melchior in 1893 was probably the first to find the gonococcus in the bladder urine of a case of acute cystitis. He did not, however, obtain cultures. Wertheim in 1895 was the first to cultivate the gonococcus from the bladder of a case of acute cystitis. Young, of Baltimore, has recently reported three cases of acute cystitis, in all of which he found the gonococcus in coverslip and in one he obtained it in pure culture. The same writer has reported the first and so far the only case on record of a chronic cystitis in which the gonococcus was the only micro-organism found. It was present in great numbers, and was obtained in pure culture. The case was one in which the cystitis had existed five years, and had followed gonorrhœa. In two other cases of chronic cystitis reported by Young, the gonococcus was found in coverslip but was not obtained in culture.

A number of cases have been reported in which the clinical signs and symptoms have seemed to indicate a pyelitis or pyelonephritis, accompanying or following gonorrhœa, and in which the gonococcus was believed to be the cause of the renal trouble. As yet, however, no positive proof of this has been furnished in the nature of a demonstration, either by coverslip or cultures of the gonococcus as the cause of the renal disturbance.

The gonorrhœal infections of the female genito-urinary organs are of such great importance that they demand especial attention.

The normal flora of these organs need scarcely be considered here, since of this flora only the so-called pseudo-gonococci are the species which interest us. In the female as well as in the male genito-urinary organs the pseudo-gonococcus exists only in name and need never be a source of confusion.

It is today generally agreed that the specific, highly contagious disease of the lower female genitalia and the urethra is caused by the gonococcus and the gonococcus alone.

The so-called latent infections have attracted much attention and have given rise to the question as to whether a woman who showed none of the clinical signs of symptoms of gonorrhœa was capable of inducing a gonorrhœal infection in a man who might cohabit with her. This is a question of especial importance in those countries in which the government exercises supervision over the prostitutes. The most recent evidence seems to show that the gonococcus cannot live in a mucous membrane without causing more or less of an inflammatory condition of the same. In many instances, however, a superficial examination of the genitalia fails to reveal the existence of any inflammatory condition. If in these cases careful bacteriological examinations are made, together with a very careful inspection of the parts, it will be found that when the gonococci are present there will be some evidence of inflammation. This indicates the great care which should be observed in the examination of suspected cases of gonorrhœa in the female and also emphasizes the fact that in all suspected cases, careful bacteriological examinations should be made. The same would also hold true in suspected cases of gonorrhœa in the male.

When once it has taken up its abode in the genito-urinary tract, the gonococcus tends to remain for a long time in the infected part. This is especially true of the urethra, where the glands form a most favorable place for its continued development after almost all the clinical signs and symptoms have disappeared. Noeggerath has introduced the sweeping principle that "once infected always infected," though this is denied by Bumm, who believes that in some cases at least, the gonorrhœal infection can be cured.

In the female the urethra is the most frequent seat of the gonorrhœal infection. The infection is not as a rule as severe as in the male, and the acute form tends to disappear more quickly,

which explains the frequency with which it is overlooked. There is, however, a marked tendency to chronicity owing to the richness of the urethra in glands.

The etiology of vulvo-vaginitis in very young girls was for a long time much disputed. That it is usually due to the gonococcus was proven a number of years ago, but the mode of infection was not at all understood, for in only a small percentage of the cases could violation be assumed as the source of the infection.

It is well known today that the gonorrhœal infection may be transmitted from one individual to another by various means other than the sexual relation. Toilet articles, soiled linen, the bath or the hands of patient or nurse may serve as carriers of the contagion.

In the adult female, the vulva and vagina are only rarely the seat of a gonorrhœal infection. This is supposed to be due partly to the resistance offered to the penetration of the gonococci by the stratified epithelium, and partly to the fact that the great number of bacteria normally present in these parts destroy the gonococcus.

Bartholinitis is not an infrequent complication of gonorrhœa in the female. It is generally agreed that the great majority of cases of Bartholinitis are due to a gonorrhœal infection, a fact readily demonstrated by culture and coverslip. Bumm has called attention to the fact that in many of these cases the infection is confined to the efferent duct of the gland and in this way an occlusion of the duct may be effected and the formation of a so-called pseudo-abscess take place.

In gonorrhœal infections of the female, metritis in point of frequency is second only to urethritis. Infection of the cervix is very common in gonorrhœa, while involvement of the body of the uterus is considered by many to be a complication. In many cases, however, the uterus appears to be infected directly and in some cases it is the only part infected. It is not unusual to find a mixed infection in these cases of metritis.

Westermarck in 1886 was the first to recognize the gonococcus in the pus from an acute inflammation of the Fallopian tube. His observations have been frequently confirmed. Wertheim in particular has made most valuable contributions to the knowledge of gonorrhœal salpingitis. He examined the pus from 116 cases of suppurative salpingitis, and found the gonococcus in

thirty-three. From many of these cases he cultivated the gonococcus in pure culture, and performed successful inoculations of the urethra of human individuals with these cultures. He found the gonococcus not only in the mucous membrane of the tube, but also in the musculature, from which he assumed that it could cause an infection of the peritoneum.

In three cases Wertheim found the gonococcus in abscess of the ovary, thus showing that it is capable of causing an ovaritis. The ovaritis usually appears to be secondary to a periovaritis.

Gonorrhœal peritonitis is practically unheard of in the male, but in the female it is not of infrequent occurrence. It is usually a circumscribed affair and limited to the pelvis.

Ceppi in 1887 first demonstrated the presence of the gonococcus in a circumscribed peritonitis, and Wertheim and others have found the gonococci in the peritoneal exudate in a number of cases of circumscribed peritonitis. Wertheim assumes that the gonococcus reaches the peritoneum either by wandering through the walls of the tubes or by escaping from the fimbriated extremity. Most writers are inclined to reject the former possibility and accept only the latter. When the gonococcus alone is present the peritonitis is usually of a benign character, but not infrequently there exists a mixed infection.

The first cases of acute general peritonitis due to the gonococcus were reported by Cushing in 1899. In one case the gonococci were obtained in pure culture from the peritoneal exudate, as well as from the deposit on the peritoneal surfaces. In the other case, the gonococci were not grown from the peritoneal exudate, but were obtained from the tubes.

Next to the genito-urinary tract, the eye is the most favorable site for a gonorrhœal infection. The conjunctiva seems to offer to the gonococcus almost as favorable a medium for its development as does the urethra. Gonorrhœal infection of the eye is characterized by its peculiar character, its contagiousness and the complications to which it may give rise. The association of purulent conjunctivitis with gonorrhœa was recognized long before the discovery of the gonococcus. Numerous inoculations of gonorrhœal pus into the eye have been made ever since Jaeger in 1812 recommended this mode of treatment of pannus.

Likewise experimenters as early as 1858 had successfully inoculated the human urethra with pus from cases of purulent con-

conjunctivitis. Fairly exact ideas were held regarding ophthalmia neonatorum and it was believed to be due to an infection during birth, an idea which has resulted in the modern prophylactic treatment. In his original article on the gonococcus, Neisser clearly demonstrated that it was the etiological factor concerned in ophthalmia neonatorum.

Gonorrhœal ophthalmia of the adult is usually due to auto-inoculation, chiefly by means of the fingers which have come into contact with the gonorrhœal pus from the urethra. This explains its greater frequency among men than among women, and also the fact that the right eye is more frequently involved than the left. It would also appear probable that some cases of gonorrhœal infection of the eye are of metastatic origin. This would appear to be especially true of certain cases of iritis and conjunctivitis occurring in association with urethral gonorrhœa, though absolute proof of this supposition is lacking.

Gonorrhœal infection of the anus and rectum was for a long time believed to be of rare occurrence. Recent investigation, however, has shown that it is not at all infrequent. In some cases the infection seems to occur as a result of rectal coitus, while in other cases the anus and rectum are infected by a gonorrhœal discharge from the vagina, and this explains the fact that it is far more frequent among women than men. Rectal gonorrhœa deserves considerable attention, since it is the cause of not a few chronic ulcerations of the rectum. The gonococci can usually be demonstrated in the discharge from these ulcerations in which they show their characteristic tendency to intracellular location.

Souplet, Rosinski and Leyden have reported cases in which the gonorrhœal infection has involved the mucous membrane of the mouth. Most of the cases reported were in the new born. There have, however, been one or two cases in the adult reported in which the gonococci were found in the secretion from the areas of ulceration.

Infection of the nasal mucosa by the gonococcus is rare, and there are only a few authentic cases on record in which such an infection has occurred. The cases reported have been for the most part in new-born or young children, and have usually been associated with a gonorrhœal ophthalmia.

Colombini has reported the only case in which the gonococcus

has been obtained in pure culture from a suppurative parotitis occurring as a complication of a gonorrhœal septicæmia.

Seifert has reported a case of mastitis in an infant from which he obtained the gonococcus. The mother had had a gonorrhœal infection of the genital organs.

Clinical evidence seems to favor the view that the gonorrhœal infection is capable of causing disturbances of the central nervous system, but the presence of the gonococci in the meninges of either the brain or the cord has not as yet been demonstrated.

Among the metastatic complications of gonorrhœal infections, arthritis is the most frequent. The etiology of the arthritic affections has long been disputed. Some have maintained that they were due to a secondary infection; others that they were due to the toxins of the gonococcus, and still others that they were caused by the gonococcus itself. Of the truth of the latter view there is no longer any doubt.

That the gonococcus is not found in all cases of arthritis complicating gonorrhœa is often due to the fact that the gonococcus has died out before the cultures are taken and its place taken, perhaps, by some other of the pus producing micro organisms, for we know that the gonococcus prepares the way admirably for a secondary infection.

Petrone in 1883 and Kammerer in 1884 were the first to describe the gonococcus in an arthritic effusion complicating gonorrhœa. They did not, however, obtain cultures.

Hock and Rendu in 1893 seem to have been the first to obtain the gonococcus in pure culture from such effusions; since then numerous observations have been reported in which the gonococci have been obtained in pure culture from cases of arthritis complicating either gonorrhœal urethritis or gonorrhœal ophthalmia.

The only case on record of a gonorrhœal perichondritis appears to be one reported by Finger, Ghon and Schlagenhauser, in which the gonococcus was obtained both in coverslip and in culture from an inflammation of a costal cartilage.

Tendo-vaginitis and bursitis, though rare, are nevertheless well recognized complications of gonorrhœa.

Dupré in 1889 appears to have first observed the gonococcus in the pus from a case of tendo-vaginitis. He did not, however, obtain the gonococcus in culture.

Tollemer and Macaigne were the first to obtain the gonococcus in pure culture from a case of tendo-vaginitis, and since their observations, several similar ones have been reported. Clinically it would appear that the tendon sheaths of the extensor digitorum communis, the flexor pollicis longus and the tendo Achillis are most frequently involved. This fact coupled with his own experience has led Jacoby to consider Achillodynia as a gonorrhœal disease.

There are several clinical observations on record in which pleurisy has occurred in the course of gonorrhœa. Mazza in 1894 was the first to obtain the gonococcus in pure culture from the exudate in a case of double pleural effusion which occurred in the course of a gonorrhœa, and which was associated with gonorrhœal polyarthritides. Chiaiso and Isnardi have reported a similar case in which the gonococcus was obtained in pure culture from the pleural exudate.

In several instances subcutaneous abscesses have been observed associated with a gonorrhœal infection. In most of these cases, however, the abscesses have been near a joint or tendon sheath and the possibility of a mere extension of the process from the joint or tendon sheath must be considered.

Bujwid in 1895 reported a case in which there were four intramuscular abscesses of the thigh from which the gonococcus was obtained in pure culture.

Though lymphangitis and adenitis are not infrequent complications of gonorrhœa, it is only rarely that the gonococcus has been obtained from them. One of the most positive and authentic cases in which the gonococcus was obtained from an inguinal bubo has been reported by Colombini.

Since it is admitted that in producing metastatic infections, the gonococcus travels in the blood current it is not at all surprising that gonorrhœal complications occur in connection with the circulatory apparatus.

There is today no question about the occurrence of a definite gonorrhœal septicæmia. The first authentic instance in which the gonococcus was obtained in pure culture from the circulating blood was reported by Thayer and Blumer in 1895. Since then several other similar cases have been reported; notably one reported by Thayer and Lazear, and one reported by Colombini.

Cardiac complications of gonorrhœa have been observed not

infrequently and have been very carefully studied. The gonorrhœal infection may involve the endocardium, pericardium or myocardium, but appears to manifest a special preference for the endocardium.

The myocardium appears to be involved only by an extension of the process from the pericardium or endocardium. Cardiac complications may or may not be associated with articular complications.

Weichselbaum, His, Leyden, Finger, Councilman and others have described in vegetations in endocarditis, as well as in myocarditis and pericarditis, a diplococcus corresponding morphologically to the gonococcus and decolorizing by Gram's method. More recently the gonococcus has been obtained in pure culture from the vegetations in ulcerative endocarditis.

In conclusion it may be said that gonorrhœa in a specific infectious disease, is due to a single micro-organism, the gonococcus. Through extension of the gonorrhœal infection by continuity, contiguity or metastasis a great variety of complications may occur in association with which the gonococcus can be demonstrated.—*Albany Medical Annals*.

ETHER NARCOSIS BY THE RECTUM.*

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Owing to the neglect of physicians in not being familiar with the history of medicine, or through the overcrowded kaleidoscopic condition of our profession during the last generations, it can be seen how little advantage has been taken of several advances proposed and made by different investigators.

Unlike many narcotics, antiseptics, antipyretics and antineuralgics of today, which, as soon as they appear on the market recommended and advertised by some enterprising firm, become a real fad, to be administered even by the laity, some of the advancements and beneficent discoveries in our line of work have needed hard-fought discussions to come out victorious after a long struggle, as was the case with the vaccine against small-pox,

*Read before the Medico-Chirurgical Society.

or antisepsis as preventive of puerperal fever. Other advances were proposed and demonstrated, to fall soon into oblivion, until after many years somebody else again took up those ideas and showed the true value of that which, at that time, was seemingly insignificant.

The able Desmonceau, for instance, was the first to propose the extraction of lens for highest myopia; Wenzel performed it, and at the Ophthalmological Congress of 1858, in Heidelberg, Weber and Mooren recommended the operation, but, through the opposition of Von Graefe and Donders, the method was forgotten, until the year 1889, when Fakala showed to the medical society in Vienna many cases of myopia, in which he had removed the lens with good results, and shortly afterwards the French oculist Vaché reported also several cases of myopia treated in the same way, so that this operation, the so-called phakolyse, is now generally adopted.

In 1762, Lambert, surgeon in Newcastle, was the first to sew up the wounded side of an artery, which proved a success, but Assmann, experimenting with animals, produced by arterial sutures, thrombosis, and the method was abandoned until, 120 years later, Czerny and Schiede, separately, put up lateral stitches on the jugularis communis and the vena femoralis communis.

Similar to these has been the fate of the idea which is the subject of this writing. In 1847, shortly after the discovery of the anesthetic properties of ether, the Russian surgeon Pirogoff sent a communication to the Parisian Academy of Medicine, saying that with a syringe full of ether, placed in hot water and connected through a tube with a canula introduced into the rectum, he had produced anesthesia inside three or five minutes. In 1849, Limouin, in France, tried this method, but, owing to the generally adopted use of chloroform, said experiments were soon forgotten, until in 1884, Daniel Molière, of Lyon, and Alex Iversen, of Copenhagen, brought it again before the profession, to be now generally accepted and highly recommended by those who have used it.

Here it seems that the method is entirely unknown, as conferees I discussed the subject with had not even heard of it, or made the objection that it might ulcerate the intestines, producing strictures of rectum or severe diarrhœa. Others, not grasping the why and wherefore of rectal anesthesia, said that

a tube introduced into the nose to insufflate ether into the respiratory organs, had all the advantages they wanted, without considering that even these insufflations of ether can, and very often do produce acute œdema of the lungs, bronchitis and secondary pneumonia in the aged, and even death on the operating table, through direct asphyxiation, or short time after an operation, through hyperæmia of the lungs. In talking of deaths on the operating table, through ether narcosis by the mouth, I have in mind an article by Dr. J. Schneider, published in the *Deutsche Medizinische Wochenschrift*, of the 28th of last December, in which he reports, in consequence of the aforesaid, deaths of several patients by different surgeons. Therefore, the vital indication for rectal narcosis should be when one has to fear the direct or after effects of any irritating gases, as is the case with old people or patients with pleuritic exudates or congested lungs, because by inhaling ether, be it with mask or a tube placed in the nose and insufflated, it would have a bad effect on the condition of the already diseased organs, or would produce asphyxia, acute œdema of lungs or secondary bronchitis and pneumonia in those of advanced years.

It is better in operations on the head, face or neck, to have free access to those parts, without being interfered with, by the one who administers the anesthetic, and for this reason rectal narcosis is what we desire, because the surface is entirely free from the anæsthetizer, from the mask or the tube into the nose of the ether insufflator. The narcosis can proceed uninterruptedly without the septic mask or tube coming into contact with the mouth or nose in operations in those regions. Besides these advantages the patients do not experience any discomfort of any nature whatever.

In operations on lower extremities rectal narcosis cannot be used on account of topography, and in laparotomies the distension of the intestines produced by the ether gases would interfere with the closing of the abdomen. An already diseased rectum or intestines cannot be subjected to etherization, nor patients without the sphincter ani.

The apparatus I have used for this kind of narcosis consists of a cylindrical vessel containing about two quarts of water, having on the inside a tube which commences at the bottom, passing up and out, connecting with a small funnel. Opposite this and on upper wall is an opening and tube to let out the overflowing

water. Between these tubes there is on the wall a cut one and a half inch wide, running almost the whole length of the vessel and hermetically sealed by a glass plate; behind this a thermometer is attached. A small device inside the vessel supports the ether flask. The cover has another opening in center, through which extends a rubber tube joined to the ether flask, about two feet long; to this tube is attached a faucet and hard rubber nozzle, the latter to be inserted into the rectum. Pouring into the vessel and through the funnel water of 105° Fahrenheit, the ether fumes are perceivable coming through the nozzle after opening the faucet; the etherization can then begin. At a lower water temperature the ether would evaporate very slowly, and at a higher one it would boil.

The evening before an operation the patient requires a physic and a water enema, which should be repeated one or two hours before operating, all of which is necessary to obtain a successful narcosis. How long does it take to have patients under the influence of ether by this method? It all depends upon the constitution of the person to whom it is to be administered, as by the old method some people being readily anesthetized, others taking longer to become affected.

In conclusion, permit me to relate a case that happened in my practice a short time ago. Patient, a girl, thirteen months old, suffering from mastoiditis, after acute attack of otorrhœa. Patient had the ordinary symptoms and an operation was unavoidable. The child was prepared according to instructions. On the 11th of January of this year, through the kind assistance of Doctors H. Proschold and N. Rosencrantz, the apparatus was manipulated, the doctors paying special attention to the temperature of 105° of the water, as that is of the greatest importance for the evaporation of the ether. The narcosis was timed, and it took exactly five minutes for the child to be anesthetized, without any disagreeable results. Respiration and pulse did not show any change; they were both somewhat accelerated. I performed the operation, which lasted twenty minutes, and during the time the faucet was closed twice to be reopened again, when the child showed signs of recovery. The effects of ether passed off in about one hour. The following twenty-four hours was no diarrhœa or any other displeasing rectal symptoms.—*Pacific Medical Journal*.

PREVENTION AND TREATMENT OF PELVIC IN-
FLAMMATORY DISEASES IN THE FEMALE,
BY THE GENERAL PRACTITIONER.*

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We may approximately estimate without statistics that fifty per cent of pelvic inflammatory diseases are due to infection after labor or abortion, twenty-five per cent to gonorrheal infection, the remainder to various causes, including "rheumatic diathesis, chilling during menstruation, venereal excesses," the use of unclean instruments, dressings or hands in minor gynecological manipulation.

If these statements are true a great responsibility is forced upon us, and we must face the inevitable in the discharge of our duty to womankind.

The prevention of puerperal, gonorrhœal and instrumental infection in the great majority of cases is the duty of the general practitioner. He should know how to conduct labor and abortion antiseptically, if not aseptically. See that the patient is properly prepared; that bedding, clothing and dressings are clean; that his own hands and instruments are properly cleaned and disinfected. In fact everything that comes in contact with genitalia during and after parturition should be clean—aseptic. After every labor be certain that the uterus is thoroughly emptied and properly contracted. Never use post-partum vaginal douches except for special cause. Have genitals cleansed twice a day with some efficient antiseptic solution.

If there is a continuous slight elevation of pulse and temperature a week after labor when bowels have been properly moved, diet regulated and quinine given without effect, it is usually due to some mild form of infection and want of drainage. Such case can occasionally be relieved by giving strychnia with some bitter

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tonic and using ergot in sufficient doses to produce contractions of uterus, lessening its size and expelling contents. Copious hot antiseptic vaginal douches may be of benefit if properly used at this time.

If these means fail, then the uterine cavity should be irrigated, disinfected and drained. In all cases of active infection such a course should be instituted at once. Never curette á uterus in acute active septic infection.

Here I again urge, after twelve or fifteen years of practical tests in all grades of infection, that drainage, uterine and alimentary, is the best method known to the profession of today for the treatment of these cases. That it will save more lives, conserve more tubes and ovaries, prevent more hysterectomies, and leave woman's generative organs in a healthier condition than by all other means of treatment combined.

The prevention of infection after abortion and its treatment is much easier accomplished. Simply clean out, irrigate, disinfect and dress uterine cavity with iodoform gauze, moisten with camphorated phenol, let remain twenty-four to forty-eight hours, then remove, using all the while copious hot vaginal douches twice a day. The expectant plan of treating these cases sacrificed the health and life of many a woman, especially in the city. It is worse than meddling midwifery to undertake to treat these cases without proper disinfection of hands and instruments and everything that comes in contact with the field of operation. To fail to do so is not only wilful neglect, but may be murder of the innocent, unsuspecting, confiding patient.

As to gonorrhea, he who treats the male has the first duty to perform, which should never be neglected. Every physician that treats such a case and fails to warn his patient of the danger to the female of sexual intercourse before the male is completely cured is derelict of his duty and indirectly responsible for the suffering of many a poor innocent woman.

Any man who conveys gonorrhea or syphilis to a woman should be subject to punishment by law.

Its treatment in the female, when recognized, should be prompt and energetic, especially if it is an acute active infection.

Always endeavor to prevent the virus entering uterine cavity. In gonorrheal vaginitis cleanse vagina, apply camphorated phenol pure on pledget cotton held in uterine dressing forceps;

cover inflamed area with C. P. pulverized boric acid, then dress with a pledget of gauze lintine or absorbent cotton. Let dressing remain twenty-four hours, remove, irrigate vagina thoroughly with two to three gallons of hot antiseptic solution for repeated use, boric acid preferable. Re-dress the same, except use camphorated phenol and olive oil mixed in proportion of one to two parts respectively, to apply to infected area, and moisten the dressing, using it freely; also as much as two to four drachms of boric acid at each dressing. When cervix is involved treat similarly.

When the uterine cavity is invaded, and not until then, dilate cervix, curette uterus, wash out with mercuric chloride 1-4000, dress with iodoform gauze, moisten with camphorated phenol, irrigate with mild antiseptic and redress uterine cavity every twenty-four hours, using the oil and camphorated phenol on gauze after first dressing.

If urethra or bladder is involved, give pyrozone, three per cent solution, one teaspoonful in teacup of hot water three times a day on empty stomach; also a bitter tonic containing fluid hydratis colored and an alkaline diuretic with plenty of water—preferably lithia water.

If much tenesmus one quart infusion of buchu and uva ursi leaves is drunk every twenty-four hours.

In sterile women with deficient uterine development, flexed uteri, dysmenorrhea, to prevent or correct tubal involvement, dilate cervix thoroughly, curette uterus, disinfect and dress antiseptically with iodoform gauze, intrauterine and wet with camphorated phenol.

Use copious hot antiseptic vaginal douches with dressing in uterine cavity, give salines, also equal parts elix. six bromides and liquor sedans to relieve pain and for its sedative effect on generative organs.

Such cases should be followed with uterine drainage, commencing a week or ten days after operation; never use a plug or stem cervix that does not drain, but a drainage tube with plenty of openings and large channel so as to secure free drainage. In placing and replacing tube always cleanse, disinfect and dip tube in pure camphorated phenol, cleanse cervix and introduce tube without touching anything except cervix with tube.

If drainage is obstructed in these cases, or you infect patient

by dirty work, either at operation or removing, cleansing or replacing tube afterwards, you will do more harm than good. Where work is done properly and antiseptically the dysmenorrhea and abnormal condition of uterus is not only relieved, but tubal and ovarian involvement in many cases prevented or relieved and the sterility cured.

In cases of chronic endometritis, subinvolution of uterus or fungous degeneration of endometrium, with menorrhagia curette uterus, disinfect and dress antiseptically with gauze and camphorated phenol—i. e., carbolic acid crystal melted by heat, one part, to which add gum camphor two parts; use copious (two or three gallons) hot sterile vaginal douches twice daily, removing gauze intrauterine dressing on second day. Later use intrauterine alterative application and gauze drainage followed by tubular drainage if necessary. This treatment will frequently prevent involvement of other pelvic organs, provided it is done with due regard to aseptic methods, with sterile instruments and clean hands; if not so done, may render the patient an invalid for life or cause death.

There are two general classes of impairment of the pelvic organs which may be classed as chronic salpingo-ovaritis, with and without pus formation, that require extreme care in treatment and nice discrimination in diagnosis to prevent doing patient more harm than good. These cases are subject to acute exacerbations of inflammation, recurring attacks, the uterus, tubes and ovaries being more or less bound down by adhesions, depending upon severity of the attack of inflammation, structures involved and variety of infection. If pus be present it would be criminal to curette the uterus, unless free drainage be secured through cervix and by vaginal incision after curetting.

To introduce sound into uterus, use auterine repositor or replace uterus by force, in these cases is to be condemned. The uterine sound should rarely, if ever, be used in any case, and then only when sterilized and parts cleansed and disinfected. Never introduce sound except by use of speculum, and never allow it to touch anything but the cervical and uterine endometrium.

By systematic local and constitutional treatment of these two classes of cases the great majority can be benefited, and those without pus formations may be permanently relieved. To sacrifice the tubes and ovaries, perhaps uterus, without an effort to

save them is not justifiable. Even when such operations are required the treatment improves the condition and renders the operation less hazardous.

We can only give a condensed general outline of treatment in these cases for want of time, and for the reason that each case has individual characteristics of its own that must be recognized for successful treatment.

As a rule, it is best to treat such cases in the knee-chest position, especially if uterus is retroverted, so as to elevate pelvic organs as much as possible, putting the adhesions on tension, hastening their absorption. Such elevation relieves pelvic hyperemia, restores parts to nearer normal position and gives comfort to patient when the tampon is properly adjusted. If ovary is prolapsed it should be carried as high as adhesions will permit without using undue force, and wool so adjusted as not to make pressure on tender points. Some will bear but small pledgets of wool at first, gradually increasing the size; others will require large amounts. Lamb's wool 1 in 1 to 2000 mercuric chloride is best in majority of cases. If it irritates, a doubly carded fine article should be used. Cotton, as a rule, is worse than useless in these cases and frequently does more harm than good.

The wool should be loosened up, made as spongy as possible so as to prevent packing in hard lumps in vagina. Treat case every second day at mornings, especially where pelvic organs need support, and instruct patient to remove the wool next day at night and use two or three gallons very hot water as vaginal douche. If much relaxation of vagina add pulverized alum and boric acid, equal parts, one tablespoonful to each gallon hot water. Always remove wool and use douche on retiring at night, with patient on back, never in sitting posture.

Glycerine and boric acid, adding alum when needed, may be used on the wool parts needing depletion. At other times dry dressing may be used, throwing one to two drachms dry boric acid up into vaginal vault or any cervix by means of a powder-blower. Occasional painting vaginal vault with com. tr. iodine hastens absorption of exudates and adhesions. If applied to endometrium, must be done with extreme care in these cases, else it will light up acute inflammation. Ichthyol, 10 to 30 per cent., with glycerine, or in the form of ointment, with or without iodine, acts well in many cases. If any inflamed spots in cervix or vagina.

may use applications camphorated phenol pure or with oil. The same may be applied to endometrium in some cases, but with extreme care as to manipulation and kind of cases. Never in pus cases nor during acute inflammation, but where applications are made to endometrium, cervical canal must be patulous and free drainage from uterine cavity secured and applications made aseptically. During acute exacerbations of inflammation in these cases no vaginal dressings should be made; copious hot vaginal douches should be given two to four times in twenty-four hours; patient kept strictly in recumbent position, not allowed to even sit up in bed for any purpose. Bowels thoroughly moved at first with salines and kept loose. Occasional small doses calomel stimulate secretions, act as an alterative and hasten resolution or absorption.

Nothing has acted better in my hands as a uterine sedative in these cases than equal parts of liquor sedans and six bromides, to which may be added small doses of codeia. With this mixture, the use of saline and hot douches, opiates are not needed in these cases. Easily digested nutritious diet should be ordered. Tonics combined with such remedies as will improve digestion and disinfect alimentary canal should be given. Quinine in five to eight grain doses twice a day to check inflammation.

Salol prevents fermentation and gaseous distention in intestines and adds to comfort of patient. The nucleins or protonuclein increases the white blood cells and adds to their phagocytic action, which is a valuable adjunct in many cases.

Later, after acute symptoms have subsided, earlier in weak anemic cases, iron in some readily assimilable form is useful. In all cases of pelvic trouble tone up nervous system, improve digestion, keep bowels moving, skin active, with plenty of fresh air and good food.

Avoid opiates, preparations of cocoa, stimulants, kola and coal-tar derivatives as much as possible in these cases.

Strychnia in some form, with fluid hydrastis colored, combined with disinfectants, digestants, tr. cinchona or tr. gentian comp., meets most indications of tonics.

Bland's Iron and Arsenic Tablets have done me good service where iron has been indicated in chronic cases. Where much gastric disturbance, with or without kidney or bladder complications, pyrozone, 3 per cent. solution in one-half to one teaspoon-

ful doses, one-half to one hour before meals, in teacup hot water, is a remedy of no little value.

Systematic bathing, chest expansion, exercise, proper clothing and well regulated diet are factors of great importance to these cases.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Meeting of March 13, 1900.

THE PRESIDENT, CLEMENT CLEVELAND, M.D., IN THE CHAIR.

Dr. Clement Cleveland showed a specimen of a RUPTURED OVARIAN CYST which he had removed. The patient gave a history of a fall. At the operation a great deal of fluid was found in the abdomen and a tense cyst at the side of which another ruptured cyst or possibly part of a multilocular cyst. There was a peritonitis present, so drainage through the cul-de-sac was established. Dr. Skene's clamp was used satisfactorily in the removal of the tumor. Despite all efforts, the patient's bowels could not be made to move and pain and nausea became continuous. Finally, forty-eight hours after the operation, the lower bowel was distended by oxygen gas up to the point of pain. After this, the twist or obstruction evidently being relieved, the patient passed gas, the distention disappeared and the abdomen became flat. The patient is now in stupor and the prognosis is bad. The reason for reporting the case is to speak of the method of distending the lower collapsed bowel in the hope of relieving the obstruction higher up, which must be useful in other cases.

In reply to questions by Dr. Boldt, Dr. Cleveland said that he had used oxygen in preference to carbonic acid gas because it was present.

Dr. Brothers called attention to the feasibility of employing the gas in an inverted siphon of seltzer water.

Dr. Cleveland replied that he had used the inverted siphon in a case of intussusception.

Dr. William R. Pryor showed a CYSTOSCOPE, modified from Dr. Chetwood's. The light is concealed, the handle is changed so as to reduce to a minimum the danger of wetting the wires and the lumen of the tube is free for the passage of instruments. The chief advantage is in the freedom of mirrors and lenses to be adjusted. It can be used without anaesthesia. It is preferable to have the patient under ether and in the Trendelenburg position. The patient is placed in the lithotomy position, the tube is introduced without the lamp and used as a catheter. The table is then lowered into the Trendelenburg position and the lamp introduced. The only necessary caution in its use is to prevent bearing hard against the sides of the bladder.

The paper of the evening was then read by Dr. Abram Brothers on "SOME POINTS IN THE DIAGNOSIS AND MANAGEMENT OF CYSTITIS IN THE FEMALE." The author referred to the symptomatology of the disease in its acute and chronic forms and emphasized the fact that with the modern means of exact diagnosis of vesical conditions, obscure lesions were no longer a mystery. "Irritable bladder" is now a myth. The author has been working chiefly with the Nitze cystoscope and believes it to have advantages over the Kelly instrument in that the bladder is directly illuminated and a larger area can be seen in each field. The position of the patient, too, is easy, and no preliminary dilatation or anaesthesia is necessary. Further, the interior of the bladder is distended by a fixed quantity of an antiseptic, transparent medium (boracic acid solution). The author then related the various visible changes in the bladder in disease and accepted Casper's classification: 1. Change in color and lustre; 2. increased capillary circulation; 3. swelling; 4. changed secretion. The inspection of the bladder is positively contraindicated in acute inflammations but is allowed in all forms of sub-acute and chronic inflammations. Dr. Brothers narrated in detail the treatment of the various forms of vesical inflammation, insisting upon as early an examination of the bladder cavity as is permissible for the establishment of the exact diagnosis. He then showed the Nitze instrument comparing it as he exhibited it, with the instruments devised by Kelly. He claimed simplicity and greater ease of manipulation for the Nitze cystoscope.

DISCUSSION.

Dr. Alexander J. C. Skene in opening the discussion said that he agreed with the reader of the paper that instrumental investigation is seldom necessary to make a diagnosis of cystitis.

He referred to the necessity of the general practitioner treating cases of cystitis intelligently. In speaking of the differential diagnosis of cystitis, Dr. Skene said that a slight displacement of the bladder could cause frequent urination and pain in the erect position while a complete prolapsus would not. The degree of cystitis can be determined by the condition of the urine clearly and definitely. But in some forms of ulceration, secondary pericystitis and neoplasms, a cystoscopic examination is necessary because the urine does not always show in these cases characteristic changes. The speaker referred to the possibility of doing great injury to the bladder by instrumental examination during an acute cystitis. He spoke of the fact that the Kelly endoscope of today was only a modification of the rubber one devised by Dr. Robert Newman many years ago. He said that for examination of the ureters the endoscope was no better than the cystoscope and was more difficult to introduce. Dr. Skene finds that a cystoscope with a slight curve is easy to insert and can be used for ureteral work with as great facility as the Kelly endoscope. In closing, the speaker said that the fountain syringe was to be preferred to the piston syringe which the reader of the paper had advocated; the possible introduction of air into the bladder was always to be avoided, if possible.

Dr. Hiram N. Vineberg compared the Kelly and the Nitze instruments. He said that the Kelly endoscope has the advantage of sterilization and allows of direct examination. It permits of therapeutic applications under the eye and the removal of small foreign bodies, the snipping off of small growths and the curetting or canterization of the vesical mucosa. By the use of Kelly's instrument the character of the fluid issuing from the ureteral orifice can be easily seen which is impossible with the Casper or Nitze instrument. By the employment of Kelly's endoscope urine may be collected from either ureter thus obviating the necessity of ureteral catheterization.

Dr. G. T. Harrison said that the prognosis in chronic cystitis was favorable if pains were taken. The gradual dilatation of the

bladder under pressure, by the use of a funnel, can be regulated to any desired degree.

Dr. Vineberg said that in chronic cystitis the use of scale pepsin dissolved to any percentage desired for each case was beneficial. It is especially soothing to the inflamed mucous membrane.

Dr. Skene said that he feared the traumatism caused within the bladder much more than he did the introduction of bacteria. If the mucous membrane be intact, bacteria will be taken care of. For topical applications the endoscope is to be preferred; but not for the removal of growths. In this procedure, the base will continue to bleed; if not it will continue to break down under the influence of the urine and in time a calculus will form. The speaker doubted the necessity of catheterizing the ureters unless there is disease of the pelvis of the kidney or the ureters which need attention. By the use of Harris's instrument the urine from each kidney can be obtained separately. The great damage done by such catheterization is by injury, not by the introduction of germs.

Dr. Joseph Brettauer agreed with Dr. Skene on the wisdom of not catheterizing the ureters. He finds it necessary in few cases. He narrated a case of tubercular kidney in which the kidney had likewise been infected by an attempt to catheterise the ureter. Although the instruments were clean and everything was done in an aseptic manner, the patient showed the new infection within twenty-four hours. The speaker endorsed the use of the Harris separator as fulfilling every purpose.

Dr. E. B. Cragin spoke of Dr. Skene's attitude on the danger of infection of the bladder by dirty catheters and asked if Dr. Skene feared injury to the bladder more than he did the introduction of bacteria.

Dr. Skene replied that he did fear infection of the bladder, but he is equally afraid of traumatism.

Dr. Brothers closed the discussion by urging that, with care, gradual dilatation of the bladder by the piston syringe was no more harmful than by the fountain syringe, and one knew the exact amount of fluid introduced.

PROGRAMME OF THE TWENTY-FIFTH ANNUAL
MEETING OF THE AMERICAN GYNECOLOGI-
CAL SOCIETY, WASHINGTON, D. C.

May 1, 2 and 3, 1900.

The Sessions will be held in the Lecture Hall, Columbian University, corner of 15th and H Streets, N. W.

Tuesday, May 1st.—Morning Session at 10 o'clock. Roll-call. Reception of Guests, etc.; Address of Welcome by Joseph Taber Johnson, M.D., of Washington; The Technique of Operations for Intraligamentous Tumors, W. H. Wathen, M.D., of Louisville, Ky.; Fecal Fistulae, I. S. Stone, M.D., of Washington; A Study of the Remote Results of Conservative Operations on the Ovaries and Tubes, W. L. Burrage, M.D., of Boston; Internal Secretion of the Ovary, A. W. Johnstone, M.D., of Cincinnati; The Techniques, Indications, and Ultimate Results of Suturing the Round Ligaments to the Vaginal Wall for Retroversions and Flexions of the Uterus, Hiram N. Vineberg, M.D., of New York; A Comparison of Vaginal and Abdominal Operations, G. Richelot, M.D., of Paris, France; Demonstrations of Casts Illustrating the Anatomy of Pregnancy and Labor, also Models used in Gynecologic Teaching, J. Clarence Webster, of Chicago; Combined Nephrectomy and Ureterectomy, E. E. Montgomery, M.D., of Philadelphia; The Anastomosis of the Ureters with the Intestines, An Historical and Experimental Research, Reuben Peterson, M.D., of Chicago; A Critical Survey of Ureteral Implantation, J. W. Boyce, M.D., of Washington; Migrated Ovarian Tumors, George M. Edebohls, M.D., of New York; The Best Method of Extirpating Fibroid Uteri, Howard A. Kelly, M.D., of Baltimore; An Appreciation of Kelly's Method of Removing Fibroids of the Uterus, A. Lapthorn Smith, M.D., of Montreal.

Wednesday, May 2d—Morning Session at 10 o'clock. Bronchial Disease not Invariably a Contraindication for Ether Anesthesia in Abdominal Surgery, Thaddeus A. Reamy, M.D., of Cincinnati; The Treatment of Full Term Ectopic Gestation. Should not the Child Receive More Consideration? Edwin B. Cragin, M.D., of New York; President's Address at 11 o'clock; The Relationship between Dysmenorrhea and Appendicitis, Archibald McLaren, M.D., of St. Paul, Minn.; Executive Session at 12.30 P. M.

Thursday, May 3d—Morning Session at 10 o'clock. Clinical Data Relating to (a) Urinary Toxemia, (b) the Operative Treatment of Uterine Displacements, (c) Ectopic Gestation, (d) Certain Complications of Uterine Fibroids, Egbert H. Grandin, M.D., of New York; (a) Demonstrating the Utility of a Certain Chart for the Determination of Pelvic Asymmetry from a Very Simple Method of External Pelvimetry, (b) the Advantages of Employing a Certain Background in the Photography of Pathologic Specimens, Philander A. Harris, M.D., of Paterson, N. J.; A Contribution to the Management of Face Presentations, with Report of Two Cases, Malcolm McLean, M.D., of New York; The Pernicious Nausea of Pregnancy, with a Report of Cases and Autopsy, E. P. Davis, M.D., of Philadelphia.

Afternoon Session at Marshall Hall. Anniversary Exercises; Personal Reminiscences Associated with the Progress of Gynecology, T. Addis Emmett, M.D., of New York; The Status of Gynecology in 1876 and 1900, Alexander J. C. Skene, M.D., of Brooklyn, N. Y.; Reminiscences of the Foundation and Early Years of the Society, James R. Chadwick, M.D., of Boston; The Personal Factor in the Work of the American Gynecological Society, E. Van de Warker, M.D., of Syracuse, N. Y.; Some Kaleidoscope Pictures in Rhyme, Thaddeus A. Reamy, of Cincinnati.

EDITORIAL.

HYSTERECTOMY IN AMERICA FOR MYOMA.

In the development of the operation of hysterectomy America has had a large share, both by original inventions, and by adopting and perfecting the work of continental and British operators. Although the earlier surgeons worked in isolation, and in ignorance of the methods of each other, and of European operators, yet, during the last generation, a constant succession of ambitious youths, and of successful and mature surgeons, has taken advantage of the unbounded courtesy of distinguished European operators, and especially of those of Germany, to complete their education, or to improve their practice respectively, by observations in the great clinics of the old world.

A complete review of the evolution of Hysterectomy in America would be too voluminous, and the writer would refer to an article already published by him on that subject: "Evolution in America of Abdominal Hysterectomy and Total Extirpation of the Uterus."—*Annals of Gynecology and Pediatrics*, June, 1895.

It may suffice to point out the principal contributions of Americans to the development of this branch of our art, and we find that the country which first gave to the world ovariectomy for tumors (McDowell, 1809) gave it also.

The first successful hysterectomy (mistaken diagnosis).—Burnham, 1853.

The first intentional hysterectomy, success.—Kimball, 1853.

A very early if not original use of the position, with elevated pelvis, and head to the light.—Noeggerath, 1873.

The first application of galvanism to uterine myomata.—Cutter, 1874.

The first application to the treatment of uterine myomata of Batty's operation of ablation of the appendages.—Thenholme, 1876.

Valuable modifications of the intra-peritoneal method of treatment of the stump.—Marcy, 1881.

A series of improvements in the technique of the extra-peritoneal method of treating the stump by which intra-ligamentous tumors and those deep in the pelvis can be removed.—J. Price and his pupils, 1886, forward.

Total abdominal extirpation of myomatous uterus, by use of clamps (first resuscitation in America of the operation since those of Freund had been abandoned).—Jones, 1888.

First separate ligation of the uterine arteries in their continuity, and total extirpation by this method.—Stimson, Jan., 1889.

Method of total extirpation by use of a staff.—Eastman, 1889.

Total abdominal extirpation, fastening stump of vagina to abdominal incision, for prolapse.—Polk, 1889.

Methods for making the stump intra-abdominal, but extra-peritoneal.—Polk, 1888; Kelly, 1890; Byford, 1890; Baer, 1892.

Total abdominal extirpation of the uterus with suppurating appendages, as a matter of election.—Baldy, Krug, Polk, 1893.

Enucleation of the stump as well as the myoma by the use of a serrated gouge, without severing the uterine arteries.—Eastman, 1894.

Total extirpation of uterus in cases of extra-uterine pregnancy, where the tube which is not pregnant is diseased.—Krug, 1894.

A collection of the results of the work of 35 American surgeons up to 1895, including operations for myoma, cancer and salpingitis, showed that during this transition period, when operators were experimenting, and learning their art, and while the aseptic technic was being introduced into our hospitals, out of 1188 cases there were 164 deaths, or a mortality of 13.8 per cent.

Since that time there has been an enormous improvement, so that at present abdominal hysterectomy is comparatively a safe operation. In the hands of good operators there are often series of 60 or 75 or more cases without a death, and in the hands of general practitioners the mortality is lower than would be expected.

The changes in methods of performing hysterectomy for myoma may be briefly summarized as:

1st. Entire abandonment of the extra abdominal treatment of the stump, by *serre-noeud* or rubber ligature.

2nd. The wide trial and substantial rejection of vaginal

hysterectomy, as an operation of election in cases of myoma and salpingitis.

3rd. The establishment of indications for the retention of the cervix uteri, as compared with total extirpation of the uterus.

4th. The adoption of a method substantially the same by most operators.

5th. The disuse of drainage, wherever possible.

6th. The common employment of the operation by general practitioners, operating in the small hospitals which are springing up in all towns in the country of 3000 or more inhabitants. Each of these hospitals has from 4 to 12 visiting physicians and surgeons, among whom there are sure to be several desirous of performing surgical operations, and ready to attempt the most difficult ones, with a zeal often in inverse ratio to experience and training.

This generalization of the operation at present works to its disadvantage, but as each of these new hospitals acts as a training school for surgeons, by degrees good surgery is diffused throughout the country. The ablest men come to the front, and by the American system of individual initiative, free competition, and the free judgment of colleagues in each locality, the benefit of surgery, and very good surgery are brought within reach of multitudes who otherwise would be unable to obtain it.

Before performing hysterectomy for myoma the most careful operators take great pains in cleaning not only the abdominal wall and the vagina, but also the uterine cavity, since the danger of infection is now almost wholly from the cervical resp. vaginal canal. Personally the writer is confident that this precaution has been the chief feature in reducing the mortality of the operation in his hands from some 10 per cent. to practically nothing. The abdomen being opened, the tumor is brought outside, if possible; the round ligament on one side is tied and cut; then the ovarian artery on the same side is tied and clamped and cut between ligature and clamp. By making an incision through the peritoneum covering the uterus, passing from the insertion of one round ligament, just above the limit of the bladder, to the insertion of the other round ligament the bladder can be separated from the tumor; a similar incision is then made through the peritoneum on the posterior surface of the tumor which can then be brought outside of the abdomen, even in difficult cases.

The broad ligament being now open it is easy to find and feel, or even to see the uterine artery, on one side. This is tied securely and clamped close to the uterus and cut between ligature and clamp. The cervix uteri is now cut across, some traction being exerted, and the knife being directed obliquely downward, so that the part of the stump remaining on the uterus is wedge-shaped. It is well, although apparently not essential, to disinfect the cervical canal when this is cut across, by pushing into it a sound wrapped in cotton soaked with peroxide of hydrogen or sublimate solution. The stump is then seized with double tenacula, so that the flaps are brought together—not including the peritoneal surfaces in the grasp of the tenacula. The incision is then continued until the cervix is nearly severed, when just as the last of the muscular tissue is cut, the other uterine artery is seen and clamped, when the round and broad ligaments are clamped and divided and the whole tumor is thus removed. It only remains to tie the second uterine artery and the arteries of the round ligament and the ovarian artery on the side last cut, and to unite the flaps of the stump with a continuous catgut suture in the muscular tissue, with a second layer of continuous sero-serous catgut suture uniting the peritoneal surfaces. The two layers of the broad ligaments are then brought together with fine catgut continuous sutures burying the ends of the uterine arteries with their ligatures. The toilet of the peritoneum is made and the abdomen closed without drainage.

If it is thought best to remove the whole of the uterus, the operation is quite similar, until the first uterine artery is tied, but instead of cutting across the cervix uteri the incision is carried down at the side until the vault of the vagina is reached, clamping the lateral vaginal arteries as they are cut. Then with scissors the cervix is liberated, keeping close to the uterine tissue, and clamping the post-vaginal artery. The end of the vaginal portion is seized with double tenacula and lifted up, and freed from the tissues on the other side, clamping the vaginal arteries, and the uterine when it is reached. After applying mass ligatures of catgut to the small vaginal arteries and ligating the uterine carefully, the muscular walls of the vagina are united with a continuous catgut suture, and above this the peritoneum is united with a sero-serous continuous suture, when the operation is finished as above stated. If owing to the enucleation of subperitoneal

masses, or for any other reason, drainage is desired it is easy to pass a rope of gauze from above downward into and through the vagina, closing the sides of the opening in the vagina with sutures which close the lateral vaginal vessels and approximate the muscular and peritoneal surfaces, and drawing the peritoneum which covers the bladder down to the incision in the vagina. Gauze drainage is, however, much less used than was the custom three or four years ago, the rule being to avoid drainage wherever possible.

The method of cutting across the cervix, or removing it wholly before securing the second uterine artery is of advantage in rendering the operation more rapid, and also because in case there are difficulties on one side, such as an adherent sacto-salpinx, or a mass of subperitoneal myoma, it is more easy to enucleate and remove such an obstacle after the uterus is liberated on one side, and the cervix divided, for then the whole tumor can be more readily lifted out of the pelvis, and whatever remains adherent can more easily be felt and seen. The operation is more satisfactory to perform, and to witness, if the surgeon is really skillful and dexterous, and has an exact knowledge of his anatomy. For those in whom these qualifications are not very evident, and for all beginners in hysterectomy, it is safer to tie the arteries of the round and broad ligaments and the uterines, on each side, before dividing the cervix, or removing it.

It remains to consider the indications for total hysterectomy in cases of myoma, as compared with leaving a portion or the whole of the cervix uteri.

In general it is better to leave the cervix; because it makes the operation shorter and easier and gives less chance of hæmorrhage during the operation, and does not open so much cellular tissue for oozing and decomposition of blood after the operation.

Because there is somewhat less chance of infection of the wound where only the small cervical canal is cut across, and instantly closed by the double tenacula, than when the whole vault of the vagina is opened.

Because the vaginal portion of the cervix is a seat of sexual feeling, and worth preserving, on that account, and the women do not feel so much mutilated if the cervix is present as when it is gone.

Because the lower parts of the broad ligaments with the cer-

vix form a better support to the pelvic contents than does a simple union of the vault of the vagina.

Total hysterectomy should be performed:

When the cervix is enlarged and diseased.

When the cervical canal is suppurating or septic.

When there is any suspicion of malignant disease.

When vaginal drainage appears desirable.

DERMOID TUMOR OF THE ORBIT.

Dr. E. W. Stevens, of Denver, reports the following case:

"On August 24, 1899, Edith T., aged eight years, was brought to me by Dr. George W. Miel, of this city, with the following history: When one year old her parents first noticed a small tumor between the left eye and the nose. The growth had slowly increased in size to the present time.

On examination of the patient a tumor about the size of a walnut presented itself at the inner margin of the left orbit, being partly within and partly without the orbit. The growth appeared to be freely movable under the skin. There was slight limitation of movement of the left eye, inward. The vision in each eye was +5 and both eyes were normal in all respects. The diagnosis of a probable dermoid cyst of the orbit was made, and its removal advised. On August 25, with the assistance of Dr. Miel, the growth was removed under chloroform anaesthesia. The cyst was found to be attached very closely to the periosteum of the inner wall of the orbit, and in attempting to separate this attachment the sac was unfortunately ruptured. A rather free arterial hemorrhage was also encountered, notwithstanding a dry dissector was used. By grasping the cyst wall with forceps, and careful dissection, it was freed from its attachments, which extended to nearly one-half of the depth of the orbit. The wound healed without suppuration, and there is no limitation of the movements of the eye.

The cyst wall was not examined microscopically. The contents of the cyst were made up of the turbid, smeary material characteristic of dermoid cysts of the orbit."—*Colorado Medical Journal*, Vol. II., No. 1.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

TWO CASES OF SPORADIC CRETINISM.

JOHN LOVETT MORSE, A.M., M.D.

Assistant Visiting Physician at the City Hospital and at the Infants' Hospital, Boston. Assistant in Clinical Medicine, Harvard Medical School.

Simon H. was born December 16, 1897. His parents were Russian Jews, not related, the mother being twenty-two and the father twenty-three. No such troubles had occurred in either family and they had never seen or heard of such cases where they lived in Russia. He was the first child, born at full-term after an instrumental labor. It was noted when he was a month old that he was pale, that his feet and hands were always cold and that his eye-lids were puffy. It was also noted that his abdomen was large and that the umbilicus protruded. All these symptoms had persisted and increased. Nothing unusual was noticed in his mental condition. He cried a good deal. He was given the breast at any time and also milk and water. He vomited occasionally and was usually constipated. He was brought to the medical out-patient department of the Infants' Hospital, June 27, 1898, because of a slight cough. He was then six months old.

He had much, very coarse brown hair. The shape of the head was normal except that the vertex was rather prominent. The posterior fontanelle was plainly felt, the anterior was widely open and the frontal suture open for about an inch. The ears were normal. The bridge of the nose was flattened and broad. There was marked puffiness of both eyelids and upper cheeks. The mouth was open and the greatly enlarged and thickened

tongue protruded about half a centimetre beyond the gums. There were no teeth. He held his head up well. The neck was markedly thickened, especially behind. There was a marked double chin. No thyreoid could be made out. There were no supra-clavicular tumors. There was moderate general kyphosis, especially in the lower dorsal region, with lordosis in the lumbar region. The back was strong. There was no rosary. The heart and lungs were normal. The abdomen was large and



.1

protuberant and there was an umbilical hernia, projecting out at least two centimetres. The liver was not enlarged and the spleen was not palpable. The glans penis was abnormally large and what remained of the prepuce after circumcision much thickened. The scrotum was as large as a good-sized hen's egg and much thickened. Each side contained an elastic mass, the size of a robin's egg, presumably the testicle. There was no marked thickening of the skin except on the face, hands and feet. The feet and hands were thickened and puffy, presenting the typical cretinoid condition. They were not cold or cyanotic but the day was warm. There was no enlargement of the epiphyses. The

long bones were not measured but the extremities seemed short. The mental condition seemed fairly good. The rectal temperature was 37.2° C.

He was put on Parke, Davis and Co's thyroid extract, gr. $\frac{1}{4}$ twice a day. This was soon increased to three times a day. Im-



A

provement was evident in a few weeks. By the thirteenth of August he had lost nearly all his hair. About the middle of September he began to show symptoms of thyroidism, fever, restlessness and crying. His tongue was then considerably smaller and he was beginning to get some new hair which was fine

and soft. He was then given about $\frac{3}{4}$ gr. of Wyeth's tablets of dried thyroid twice a day. He did not do as well on this as on Parke, Davis and Co.'s extract. He was put back on this and is still taking it. He has taken from $\frac{3}{4}$ gr. to $1\frac{1}{4}$ gr. a day. He cannot, however, take more than $\frac{3}{4}$ gr. more than a few days at a time without becoming "nervous." His father has watched him closely and gives him as much as he can take without causing toxic symptoms.

He was examined carefully November 19, 1898, when eleven



B

months old. He then seemed fairly bright. His feet and hands were warm. The hernia had disappeared. The scrotum was much smaller and but little thickened. The right testicle was still large but the left considerably smaller. He had a considerable growth of new, fine hair. He was just beginning to try to stand.

When thirteen months old he slept quietly with his mouth

shut, but on opening the lips the tongue showed just beyond the gums. The penis was then small. He seemed nearly as bright as normal children of the same age. When sixteen months old he could stand with help and said a few words. His tongue did not then protrude beyond the gums. He began to walk with a chair when about twenty months old and cut his first tooth about the same time.

He was again examined when two years old. His intelligence



B

did not seem quite normal. He could not walk alone. He had four teeth and the tongue was still a little large, but did not protrude beyond the teeth. He was markedly pale and the eyelids were a little puffy. The feet and hands were also somewhat puffy and the skin a little thick. The skin was elsewhere soft. The feet were cool. The extremities were noticeably short and thickened. He stood with a rather marked lordosis.

Measurements.	Age			
	6 mos.	11 mos.	16 mos.	2 yrs.
Occipito-frontal Circum.,	40	43	—	47 (Hair)
Occipito-frontal Diam.,	14½	16	—	22
Insert. of Ears Diam.,	11	11	—	11
Ant. Font.,	5½ x 4½	5 x 4	—	3 x 2½
Teeth,	0	0	0	4
Circum. Neck,	26	24	—	22
Circum. Chest at Nipples,	40½	47½	—	50
Circum. Abd. at Navel,	39	52	—	52
Body Length,	60	65	68	72
Vertex to Umb.,	33	35	38½	38½
Proportion above Umb. to total.	55 %	54 %	56½ %	53½ %

Bella G. was first seen at the Infants' Hospital, August 13, 1898, when she was a little more than four years old. Parents never saw any such children in Russia and nothing of the sort ever occurred in either family.

Was born at full term, after a normal labor. Second child. Always well. Cut first tooth at fifteen months. Began to sit up at twenty-one months. Began to walk when a little over two years. Father thinks child is mentally normal. Is good-natured, cleanly in habits and gets about very lively. Is not sensitive to cold and sweats freely.

When between two and three years old was treated with thyroid extract for three months. Father stopped it because he saw no improvement and the appetite was spoiled.

Head very large. Frontal and parietal bones prominent. Occipito-frontal circumference, 52 cm.; occipito-glabellar diameter, 16 cm.; biparietal diameter, 15 cm. Practically no bridge to nose; eyelids not puffy; twenty teeth; tongue normal. Neck short but not markedly thick. Circumference of neck, 27 cm. No supra-clavicular fullness. Circumference at nipples, 40.5 cm. Circumference of abdomen at navel, 45.5 cm. Thyroid not felt. Nothing abnormal about bones of shoulder girdle. Marked shortening of arms, especially of upper arms. Marked thickening of ends of all bones of upper extremities. From tip of acromion to tip of olecranon with arm flexed at right angle, 11 cm. Ulna, 11 cm. Stands with *very* marked lordosis and very prominent abdomen. No umbilical hernia. Stands with legs apart and apparent sub-luxation of both tibiae. From great

trochanter to external condyle, 12.5 cm. Fibula, 12.5 cm. Very marked thickening of ends of long bones of lower extremity.



C

Flat foot; bones of feet seem thickened; skin in good condition, possibly a little dry. Much hair, not noticeably coarse. Height,

78 cm. Vertex to umbilicus, 48 cm. Child seems mentally bright. Talks much, but indistinctly.

She was given thyroid extract, gr. $\frac{1}{4}$, twice a day, but as it took away her appetite her father refused to continue it after two weeks. She was then lost sight of and nothing is known as to her further progress.

SALOPHEN IN PEDIATRIC PRACTICE.

DR. PFEIFFENBERGER.

Among the large number of preparations which since a number of years have been introduced as substitutes for sodium salicylate, with the recommendation that they are free from the unpleasant properties of the latter, it is difficult to make a proper selection, especially in pediatric practice. That sodium salicylate is badly borne during continued use is a well established fact, and requires no further discussion. Still in cases where it need be given only in small doses for a short time I would not advise against the use of this sovereign remedy. In children, as I have frequently had occasion to convince myself, its employment, even for a short time, is very often followed by serious symptoms, such as loss of appetite, restlessness, nausea, vomiting, malaise, and even delirium. Owing to these circumstances I have found it necessary to look around for an appropriate substitute for the salicylates. For this purpose I have made use, with excellent results, of salophen, which I learned to know as a very reliable remedy in colds of all kinds, especially influenza, and also as a prompt analgesic for neuralgic pains of various origin.

One of the chief advantages of salophen in pediatric practice is its complete tastelessness and odorlessness. Even during its continued administration I was never able to observe after effects, such as are produced by sodium salicylate, and it never excited repugnance. Salophen was particularly employed by me in acute articular rheumatism, erythema nodosum, purpura rheumatica, influenza, migraine, and various neuralgias in which sodium salicylate is usually inefficient. From a large number of observa-

tions extending over a number of years, I would select the following:

CASE I.—E. B., 10 years old; markedly anemic, joints of the lower extremities swollen and painful. After sodium salicylate in large doses the pains subsided, but the drug was taken with aversion and excited slight nausea. Salophen employed in the same dose was readily taken and well tolerated. The rheumatism ran its course in three weeks, without cardiac complications.

CASE II.—A. D., 9 years old; ankle and knee-joints moderately swollen and very painful; salophen given from the first in appropriate doses, with prompt effect. The rheumatism disappeared in two weeks without cardiac trouble.

CASE III.—A. H., 14 years old; great pain and slight swelling of the joints of the lower extremities. Salophen was administered at once in doses of 60 grains daily, and was well borne. The articular rheumatism subsided completely in 14 days; heart normal.

CASE IV.—J. H., 13 years old; knee and ankle-joints slightly swollen and painful. Salophen was administered with prompt results. After 8 days the joints were freely movable; heart normal.

CASE V.—L. D., 10 years old, had been treated for several days with sodium salicylate, owing to severe pains in all his joints, especially the left ankle-joint. He vomited the salicylate and felt slightly prostrated. After the administration of salophen the vomiting failed to recur. The pains had completely disappeared in the course of two weeks. Heart remained normal.

CASE VI.—F. H., 11 years old; painful swelling of all the joints, especially of the lower extremities; increased cardiac area, systolic and diastolic murmurs. After long continued treatment with sodium salicylate the patient refused its further use, as it produced loss of appetite and vomiting. Salophen in equal doses was easily taken and gave rise to no further disturbance. The disease ran a normal course in regard to the pains and swelling; the cardiac sounds became clearer and the area of dullness smaller. After seven weeks' treatment the cardiac boundaries were normal; the heart action regular, and no murmurs were perceptible.

CASE VII.—A. St., 11 years old, during the fourth week of an attack of scarlet fever, developed swelling of the wrist and finger-joints, and later of the elbow-joints, attended with severe pains. These symptoms improved under the use of salicylate of sodium. After 10 days, however, marked swelling and painfulness of the knee-joints occurred; the first cardiac sound was indistinct and blowing. Sodium salicylate now excited vomiting and loss of appetite, and was refused for that reason by the patient. Salophen given in the same dose was taken without objection, and under its use the vomiting ceased; the appetite reappeared; the pain in the joints improved quite rapidly, although the swelling persisted. In four weeks the pains had completely disappeared; the joints were still somewhat slightly swollen; the cardiac sounds were distinctly audible, with a slight blowing murmur.

CASE VIII.—M. T., 4½ years old; examination showed profuse eruption of erythema nodosum over the legs, with moderate articular pains. After the administration of salophen for eight days the pains had completely disappeared, and the swelling had subsided.

CASE IX.—P. N., 10 years old; articular pains, and pains in the knee-joints, and moderate purpura eruption. Salophen caused a rapid disappearance of the pains, and the purpura vanished in eight days.

CASE X.—R. T., 5 years old; marked eruption of purpura with considerable pains in the joints. After the administration of sodium salicylate, malaise and severe nausea, followed by vomiting, regularly occurred. After discontinuing the sodium salicylate and employing salophen in the same dose these disturbances ceased. The heart was undisturbed and the appetite good.

In adults also salophen proved very serviceable in a large number of cases of rheumatism, but especially in influenza, migraine, and various types of neuralgia. In neuralgic pains its sedative and analgesic properties were exhibited with remarkable promptness; sometimes even a few minutes after the first dose considerable diminution of the pains occurred, which completely disappeared under the further use of the remedy. The employment of salophen both in children and adults was greatly facilitated by the complete tastelessness and odorlessness, and also by the ab-

sence of all unpleasant concomitant or after-effects. For these reasons salophen is deserving of special consideration among the specifics for influenza, since it acts here as energetically as quinine, antipyrin, etc., without the disagreeable sequelæ of these preparations.—*Aerztliche Central Zeitung*, February 24, 1900.

AMERICAN PEDIATRIC SOCIETY.

PRELIMINARY PROGRAM.

The Society will hold its Twelfth Annual Meeting at Washington, D. C., May 1, 2, and 3, 1900.

The Sessions will be held at St. John's Parish Hall, 16th Street, between H and I Streets.

Tuesday, May 1—Opening Session—9.30 A.M.: Address by the President, Henry Koplik, M.D., New York; Studies on the Blood in Childhood, Alfred Stengel, M.D., and C. Y. White, M.D., Philadelphia; The Nephritis of Influenza in Children, Rowland G. Freeman M.D., New York; Some Points in the Physiology of Milk Digestion, B. K. Rachford, M.D., Cincinnati; Malarial Coma, G. N. Acker, M.D., Washington, D.C.; "Pertussoid," F. Forchheimer, M.D., Cincinnati; Title to be announced, Samuel S. Adams, M.D., Washington, D. C.; Clinical Observations upon the Operative Treatment of Tuberculous Peritonitis, Augustus Caillé, M.D., New York.

Wednesday, May 2—Second Session—9.30 A.M. The Treatment of Hydrocephalus by Craniectomy, Edward P. Davis, M.D., Philadelphia; Intestinal Obstruction, through a loop formed by Meckel's Diverticulum with Ligamentous Attachment—Specimen, Irving M. Snow, M.D., Buffalo; Specimen—Sudden Death from Perforation of Trachea and Bursting of Caseous Gland, Augustus Caillé, M.D., New York; (a) General Subcutaneous Emphysema, (b) Congenital Cardiac Malformation with Endocarditis and Vomiting, A. C. Cotton, M.D., Chicago; A report of a case of ante-natal hemorrhage into the suprarenal capsule and

perirenal tissue, causing death three days after birth from rupture of the hemorrhagic sac into the peritoneal cavity, Samuel McC. Hamill, M.D., Philadelphia; Enteric Fever in Childhood, A. D. Blackader, M.D., Montreal; Exclusive Soup Diet and Rectal Irrigation in Typhoid Fever, A. Seibert, M.D., New York.

Thursday, May 3—Third Session—9.30 A.M. Report of the Council (for members only); A Fatal Post-Otitic Cerebral Abscess, with Amnesic Aphasia, J. Henry Fruitnight, M.D., New York; Two cases of Fatal Lead Poisoning in Children, Allen Baines, M.D., Toronto; A Case of Rhachischisis, T. M. Rotch, M.D., Boston; Measurements of Chicago School Children, W. S. Christopher, M.D., Chicago; Naso-pharyngeal Disease in Pediatric Practice, F. Huber, M.D., New York; Epidemic Paralysis in Children, Henry D. Chapin, M.D., New York; Title to be announced, W. P. Northrup, M.D., New York; Three Cases of Rotary Head Spasms associated with Rickets, D. J. Milton Miller, M. D., Philadelphia.

BOOK REVIEWS.

"Surgical Pathology and Therapeutics." By John Collins Warren, M.D., L.L.D., Professor of Surgery in Harvard University; Surgeon to the Massachusetts General Hospital. Second edition, with appendix. 1 Vol., 873 pp., illustrated. Cloth, \$5.00 net; one-half morocco, \$6.00 net. Philadelphia, W. B. Saunders.

The second edition of this elaborate work is brought fully up to date by an appendix containing an enumeration of the scientific aids to surgical diagnosis, together with a series of sections on regional bacteriology.

The same ground is traversed as in the opening chapters of the International Text-book of Surgery, but much more fully, as the greater space allows. The lucid style of the author illumines the rather grewsome subject of which he treats, and we are able to review the development of exact knowledge of this department of our art.

We shudder over the gangrene in the prison pen at Anderson-

ville, and are fascinated with the description of a twelve foot Indian Ophiophagus, ready to strike with deadly venom.

We ponder over the etiology of cancers and learn what miseries of infections and manifold sepsis are waiting for the incautious or unclean surgeon.

In the appendix specialists of all kinds will find the flora of the region in which they are interested set forth at length.

The illustrations are beautiful, for although the paper of the book has a matt finish which is grateful to the eye, yet it is so fine as to take clearly the fine colored engravings of the bacteriological specimens.

It may be remarked that the work is fortunate in escaping from its distinguished author and the Massachusetts General Hospital without having lost its appendix.

"Diseases of the Stomach; their Special Pathology, Diagnosis, and Treatment," with Sections on Anatomy, Physiology, Chemical and Microscopical Examination of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By John C. Hemmeter, M.D., Professor in the Medical Department of the University of Maryland, Baltimore; with many original illustrations, a number of which are in colors. Second edition, enlarged and revised. Octavo; 898 pages. Price, \$6.00 net, cloth. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, Pa.

The second edition of this important work appears only a little over a year from the issuance of the first edition. The whole work has been carefully revised and enlarged, and new chapters added on Hypertrophic Stenosis of the Pylorus, Obstruction of the Orifices, The Use and Abuse of rest and exercise in the treatment of Digestive Diseases, Motor Insufficiency, Electrodiaphany, Hemorrhage from Stomach, etc. The whole work treats of subjects which lie at the very foundation of life, as well as of medical practice, and the author has endeavored and succeeded in his endeavor to furnish the general practitioner with a work from which he can readily acquaint himself with all that has been done in this important branch of medicine, to fit himself to make examinations, to take advantage of new methods of

diagnosis, and to treat this difficult class of diseases rationally and successfully.

The experimental work on which the scientific deductions are based is set forth at some length and will appeal most to specialists and laboratory workers, but the whole theory and science of alimentation, of digestion and its disturbances, the significance of matters vomited or removed from the stomach, the therapeutics of digestion, both dietetic, medicinal and mechanical, are given at length. All the organic diseases of the digestive tract, which form so large a part of "internal medicine" are treated at length; even the surgery of the stomach is treated from the standpoint of the practitioner of medicine. Thus the nature, results and indications for and against operating are carefully considered, although the actual technic is not included. The illustrating, especially the plates, showing microscopical appearances are excellent.

The whole appearance and mechanical appearance of the work are of a high order.

We can well understand the enthusiasm of the author and the satisfaction which he has derived from the encouragement of his brother clinicians which he has acknowledged so gracefully by the quotation,

*"Scribentem juvat ipse favor, minuitque laborem;
Cumque suo crescens pectore fervet opus."*

"The Diseases of Children, Medical and Surgical." By Henry Ashby, M.D., London, F.R.C.P., and G. A. Wright, B.A., M.B.Oxon, F.R.C.S., England. Fourth edition. Edited for American students by William Perry Northrup, A.M., M.D. Published by Longmans, Green and Co., 91 Fifth Avenue, New York City, 1900. Price, \$5.00.

Not often has a book published across the water the advantage of a review and comment by so competent a man in his line as Dr. Northrup. We can not help wishing he had been less modest and that his work had been incorporated in the text instead of being placed in an appendix. The work itself is standard in England, this being the fourth edition in ten years. It is printed in small type which, while it maintains completeness, does not

sacrifice convenience. Illustrations are numerous and in the main good. Surgical diseases are treated much more fully than is usual in our works on Pediatrics. This edition is some sixty pages larger than the one which preceded, and contains a number of new photographs and plates. The formulæ are gathered in the appendix, after being translated into the equivalents in the United States Pharmacopoeia.

We commend the book as a most useful and complete, though condensed treatise of the diseases of childhood.

"Imperative Surgery." By Howard Lilienthal, M.D.; illustrated. Published by The Macmillan Company, New York, 1900. Price, \$4.00.

In this volume, which is not too large to carry with you anywhere, the author, under such a simple title, has endeavored to present to the general practitioner, the specialist and the recent graduate, such information as will enable him to meet the surgical emergencies of his practice in a way which is in accord with the latest successful methods of expert surgeons. When you cannot get expert surgical advice or assistance, here it is, right at hand. There is an abundance of excellent photographs and drawings, mostly original with the author or his assistants. Quite a little space is devoted to the consideration of the difficulties of operating in private practice, away from the surgical appliances of a hospital and the best means of obviating these difficulties. Then each portion of the body is taken up in turn and the emergency operations of each described and in many cases illustrated. The book strikes us as a particularly useful one for the general practitioner remote from city clinics.

"The American Year Book of Medicine and Surgery." Published under the general editorial charge of George M. Gould, M.D., by W. B. Saunders, 925 Walnut Street, Philadelphia, 1900. In two volumes. Price per volume, in cloth, \$3.00 net; in half-morocco, \$3.75 net.

The great demand for this work and the abundant supply of

material gathered by its diligent editors has led the publishers to issue it this year in two volumes, each complete in itself.

Volume I. is devoted to medicine, under the chapter headings: General Medicine, Pediatrics, Pathology, Nervous and Mental Diseases, Cutaneous Medicine, *Materia Medica*, Physiology, Legal Medicine, Hygiene, Chemistry.

Leading men from the profession have given their time to the selection of the best, each in his own line, in the current literature of the past year. Such men as Stengel, Edsall, Starr, Hand, Church, Duhring and Abbott are known everywhere. The results of their labor are gathered in nearly 600 pages, with numerous illustrations, and an index of over seventy pages.

Volume II. is not quite so large, but is devoted to Surgery, under the subjects: General Surgery, Obstetrics, Gynecology, Orthopedic Surgery, Ophthalmology, Otology, Diseases of the Nose and Larynx, and Anatomy. Here as editors we find Keen, DaCosta, Hirst, Dorland, Baldy, and others who are equally well-known for the contributions which they themselves are constantly rendering to medical literature and scientific progress. No men can be more safely trusted by the profession to select for them the most valuable of the discoveries and discussions of the year.

The publisher presents their work to us in his usual attractive and useful style, which is becoming a standard for American publishers. If you want the latest and best in a most convenient form, here it is.

"The International Text-book of Surgery." In two volumes. By American and British authors. Edited by J. Collins Warren, M.D., LL.D., Professor of Surgery, Harvard Medical School, Boston, Mass.; Surgeon to the Massachusetts General Hospital; and A. Pearce Gould, M.S., F.R. C.S., Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School. In two very handsome royal octavo volumes of about 900 pages each, Volume I. treating of General Surgery, Volume II. of Special or Regional Surgery. Cloth, \$5.00 net; Half Morocco, \$6.00 net. W. B. Saunders, Publisher, 925 Walnut St., Philadelphia.

In this valuable work the editors have aimed to produce a re-

liable textbook of Surgery, embodying a clear but succinct statement of our present knowledge of pathology, symptomatology and diagnosis, and such a detailed account of treatment as to form a reliable guide to modern practice.

To accomplish this object they have divided the subjects into various departments and sought the aid of some sixty men of wide experience and established reputation in these various subdivisions of the whole subject.

The result is a harmonious and consecutive series of monographs which bring to bear on the question discussed the latest investigation and the widest knowledge, from the cultivating of bacteria to the equipment of a hospital ship, and from the treatment of a frostbite in the north to the removal of a 100 lbs. scrotum in the tropics.

The work is so arranged that Vol. I is devoted chiefly to General Surgery and Vol. II to the various branches of special Surgery, a plan well adapted to the present needs of both the student and the practitioner.

It is perhaps invidious among so many articles of merit to select any as specially worthy of attention, but naturally one looks to those in which the recent improvements in surgery are most conspicuous, and thereby compares this work with previous treatises.

Perhaps the most noticeable fact is that all modern surgery is based on bacteriology, and the opening chapter containing a succinct but detailed description of the various bacteria which are the causes of the diseases which have at all times made such havoc among surgical patients.

It is clear that every hospital which can even pretend to be doing good work ought to be in close relations with a good bacteriological laboratory, and that liberal trustees and extravagant hospital committees ought to spend more on microscopes and thermostats even if less goes into marble and glassware. Also that there is no surer road for the well trained young graduate to make himself useful in the hospital and ground himself perfectly in diagnosis and pathology than by carefully attending to the bacteriological work of the hospital with which he is connected.

The extent to which modern surgery is indebted to india-rubber is apparent in reading the practical parts of the work,—

from the drainage tube and Esmarch bandage, the ice bag and the cold water coil, to the apparatus for all kinds of orthopedic work, the gloves of the operator and the slings of the ambulance car or the pneumatic tires of the ambulance wagon, everywhere the unpretending and faithful caoutchouc is found doing good service. Electricity too has been harnessed in a hundred ways, from the removal of superfluous hairs to the triumph of the X rays, from the pretty work of the dental engine and the fan that ventilates the hospital, to the sealing of bloodvessels by the electrically heated clamp and the lamp that illumines hidden cavities,—in a hundred ways this modern agent is pressed into the service of the surgeon.

Of course the greatest advance in surgery in the last few years is in the wide application of the principles of asepsis, and the tremendous development of surgery which this has rendered possible. The thoughtful and exact chapter on surgical technic, explains the principles on which this is founded and the results are seen in all the chapters dealing with practical work. To those who can remember the old surgery, say before 1870, it all seems like a dream, or a miracle. While the difference has been marked in all departments, of course the most striking advances are shown in abdominal surgery, which is exhaustively treated in this work. The last refinement of asepsis in the use of rubber gloves in operating appears in the photographs as well as in the text, and very nearly fulfils the desideratum expressed by the scoffing advice to "boil your hands" with which striving after perfection were once greeted. Alas, for the untimely dead. Why could we not have had these refinements earlier?

A striking feature of the work is the evidence it affords of the gathering into general surgery of the work that has been divided during the last generation among specialists. It is to be observed that there is a complete treatise on gynecology, which is thus brought into line as a subdivision of surgery, at least as far as concerns all the operative work. The same may be said of the diseases of the eye, the ear, the skin, the rectum, the urethra, etc. More and more with the thorough training of the young practitioner the treatment of special ailments is taken up by the general practitioner, while the operations are attempted by the general surgeon. Mr. Holmes, the eminent editor of the great work on surgery of the last generation is said to have defined a

"surgical case" as one with a guinea, and his hint has not been lost on his successors. The chapter on military surgery and that on surgery in the tropics are elaborate and of particular interest now that we have entered on the old desire "*gentes imperio regere.*"

To sum up the work is singularly complete, authoritative, and up-to-date. The authors have worked together and the work has been laid out so well that there is little repetition. Each author seems to have followed Dr. Billing's advice, to "have something to say, say it, stop when you have said it."

The authors are most of them Americans, several of them from Boston, and it is with a certain satisfaction that we observe the increasing extent to which the profession of Boston is entering into the higher fields of scientific medical literature. Certainly it could find no more worthy leader than the distinguished editor of this great work, whose able surgery is founded on severe scientific study, and whose hereditary talents are trained by hard and conscientious work.

ANNALS OF GYNECOLOGY AND PEDIATRY

VOL. XIII.

MAY, 1900.

No. 8.

ORIGINAL COMMUNICATIONS

THE VAGINAL ROUTE.

O. BEVERLY CAMPBELL, A.M., M.D.

IN choosing between the vaginal and supra-pubic routes, the one should be selected in each individual case which will offer the greatest advantages for complete work with the least possible danger to the patient. Or where complete work is inadmissible (as in some cases of pelvic abscess), the most favorable route should be selected for incision and drainage.

The two routes, the vaginal and supra-pubic, are the avenues of approach through which we may attack diseased pelvic organs, and we should be as familiar with the one as the other, if we are desirous of attaining the advantages which will undoubtedly accrue from such knowledge.

When either route is selected and adopted as an invariable procedure, to the total exclusion of the other, it is not likely that such an operator will or can appreciate fully the advantage offered from a proper knowledge of the other route.

Because an individual operator can, through an inch and a half incision in the abdomen, remove successfully large adherent pus tubes and diseased ovaries, it does not necessarily follow that he has chosen wisely and well as to route or method; as one less dextrous and yet capable might more often fail than succeed in accomplishing the same result.

A practical method applied to either route is one which can be successfully practiced by the average operator, and not one

which is only successful when practiced by one unusually skilled. Indeed it is reasonable to conclude that a method that requires unusual skill for its successful accomplishment, when practiced by one thus skilled, that even then it is subjecting the patient to a much greater risk of life, than were a more practical method chosen, where probably less skill is required for its accomplishment.

Conservation of organs and functions must also be considered in selecting a method, or a route through which to operate.

The needless sacrifice of organs and functions is to be condemned, and a method practiced through either route which requires such sacrifice is not worthy of consideration.

I refer here to the routine method of bi-secting the uterus through the vaginal route in cases of pelvic inflammation.

I grant it that occasionally such conditions exist in which it is necessary to sacrifice the uterus; and the vaginal route is probably the best; the method of bi-secting the uterus is probably a very good method under such conditions, but when such a method advocated as a rational method to be applied to all cases of pelvic inflammation, I denounce it as pernicious.

In defence of the vaginal route in dealing with pelvic inflammation, it is claimed that through an anterior or posterior incision that the fundus can be delivered through the incision, the ovaries and tubes in turn delivered and radical or consecutive work practiced. That such work can be done in many instances is true; but it can be done better, with less risk to the patient and with more perfect results in the vast majority of cases of pelvic inflammation, through the supra-pubic route.

The Trendelenberg position offers superior advantages in dealing with this class of cases, and it is quite generally used in this country and on the continent.

The chief objection that has been offered to it is, that with the pelvis upon such a recline, the drippings from the pelvis are likely to enter the abdomen.

I have sought to overcome this objection by the construction of a table which modifies somewhat the Trendelenberg position; the patient is placed in the Trendelenberg position and allowed to remain eight or ten minutes, while the abdomen is given a final treatment preparatory to operation.

She is then drawn six inches higher upon the table, the pelvis now resting upon a level plane six inches wide. The intestines will have gravitated while the patient occupied the Trendelenberg-position, and will not be affected by drawing the patient higher allowing the pelvis to rest upon the level plane. This

It appears to me that the position offers a better opportunity modified position offers, in my judgment, all the advantages of the Trendelenberg position and a few superior advantages.

In the Trendelenberg position the operator works upward under the pubic arch, and as mentioned, the rupture of a pus tube or an ovarian abscess is more likely to infect the patient by the escape of pus into the peritoneal cavity.

In modified position the operator works downward in the its gaining entrance to the peritoneal cavity.

pelvis and pus is more easily removed, and with less danger of to work, giving more room and admitting more light.

There are a certain class of inflammatory conditions of the pelvis in which the vaginal route undoubtedly offers some superior advantages. In cases of true pelvic abscess, which are extremely rare, incision and drainage through the vagina is all that is necessary to a cure. In cases of pelvic inflammation with pus that can be distinctly palpated through the cul de sac, vaginal incision and drainage will often effect a cure.

There are occasionally cases of septicemia following labor or abortion, where the entire uterus is septic, and where vaginal hysterectomy will offer the best chances for the patient's recovery.

I am not in accord with the commonly accepted dictum, that where it is necessary to remove ovaries and tubes, as the uterus is considered useless its removal should follow.

In the vast majority of cases of pelvic inflammation, the uterus if properly cared for, following a single or double oöphorectomy, will be restored to health.

The uterus is the key stone to the arch of the pelvic floor, it tends to support the bladder posteriorly, and equalizes to some degree intra-abdominal pressure by separating the intestines over a wider area of the pelvic floor. Being hung in the pelvis, its interior opening into the vagina, aided by muscular contraction, will drain itself; and it is only occasionally necessary to remove it to facilitate a cure.

The additional risk to life by the performance of as formidable an operation as hysterectomy must also be considered.

Where an operation can be performed as safely and as completely through either route, then I should give the vaginal route the preference.

The vast majority of women will submit to an operation through the vaginal route with less apprehension, than where the incision is to be made in the abdomen.

Indeed, very many women will submit to an operation through the vaginal route that would not submit to an operation through the supra-pubic route.

The occurrence of ventral hernia and abdominal scars deserve consideration only where an equal choice between routes is to be considered; that is, when an operation can be as safely and completely performed through either the supra-pubic or vaginal routes.

We will now consider a class of cases which can be safely operated upon through the vaginal route.

Small fibroids of the uterus of the interstitial or sub-serous variety may be operated upon through the vaginal route.

Professor A. Martin, of Germany, utilizes the vaginal route in all cases of the varieties of tumor mentioned, that are of a size that will admit of the uterus and tumors being delivered through an incision in the anterior vaginal wall.

Martin's method is to do an anterior colpotomy, dissecting the cellular tissue and bladder from the anterior wall of the uterus; he then delivers the fundus and tumors through the vaginal incision, removing the tumors by myomectomy.

Both the interstitial and sub-serous varieties are treated by this method.

The vaginal wound is closed with continued cat-gut sutures. Vaginal hysterectomy may be performed in any of the varieties of uterine fibroids, where the size of the tumor will warrant such a procedure.

Retro-displacements of the uterus can be as successfully treated through the vaginal as through the supra-pubic route by the performance of anterior colpotomy and vaginal fixation.

Adeno-cystoma of the ovary of small size can be operated upon and removed equally as well through the vaginal as the

supra-pubic route; so may all non-inflammatory diseases of the ovaries, such as cystic degeneration and atrophy.

Very many cases of tubal pregnancy, in fact, the large majority of cases, may be operated upon through the vaginal route with equal safety.

We are generally agreed that vaginal hysterectomy offers the very best chances for the relief and cure of our patients in uterine cancer. The progressive gynecologist of today is he who avails himself of the advantages of a thorough knowledge of both the vaginal and supra-pubic routes.

An operation begun through one route and completed through the other is not an argument against the first, but instead, proof of the advantages to accrue from a knowledge of both.

There are few gynecologists who will claim to possess diagnostic acumen sufficient to outline pathologic conditions of the female pelvic organs so accurately as to be always able to select, before the exploratory incision is made, the best route or method, but as an experienced general, may realize the necessity of changing tactics, so may the surgeon even to the utilization of both routes. There are methods of operating which apply to both the vaginal and supra-pubic routes, which, while reasonably successful in the practice of their originators, the reverse is true when practiced by the average operator.

A few days ago I witnessed an experienced operator, through a very small incision in the abdomen, perform a double oöphorectomy in a case of chronic salpingitis. The left ovary and tube were delivered through the wound, ligated and removed.

The right ovary and tube were dissected from a bed of adhesions; but it was noticed that the tube had been torn, a part of it left in the pelvis; three days later the patient promptly died.

Vision surgery, offered by the Trendelenberg position, and the free incision, has been severely criticised by the advocates of the small incision. But had it been used in the case mentioned the patient would today be alive.

St. Joseph, Mo.

AMERICAN GYNECOLOGICAL SOCIETY.

THE REMOTE RESULTS OF CONSERVATIVE
OPERATIONS ON THE OVARIES AND
TUBES. AN ANALYSIS OF EIGHTY-
FIVE CASES.*

W. L. BURRAGE, M. D.

By conservative operation is meant an operation performed on diseased uterine appendages which has for its object the preservation of function, a conservation of one ovary or of a portion or portions of one or both ovaries with their tubes or as much of the tube or tubes as is reasonably normal in appearance.

Attention is called to the work of Drs. W. M. Polk and A. Palmer Dudley in the field of conservative operating. Out of seventy-eight cases reported by the former, pregnancy followed in four; and out of sixty-five reported by the latter, pregnancy followed in ten. In no case did pregnancy result after the resection of a pus tube.

The writer has been doing conservative operations since 1892 and classing under this heading all operations in which one ovary or one tube or a portion of one ovary or a portion of one tube was left behind; and excluding cases of suspension of the ovaries, his cases up to March 1, 1900, number 137.

It has seemed best to consider only those cases concerning which reliable information could be obtained at least a year after operation, under the assumption that as a rule a satisfactory opinion as to remote results of this class of operations cannot be formed before that amount of time has elapsed.

Of 104 patients operated upon previous to March, 1899, 19 could not be traced, or had been under observation for periods of less than a year, making the total number of cases in the tables accompanying the paper, 85. These eighty-five cases are

*Original Abstract of Paper read before the American Gynecological Society at Washington, May 1, 1900.

divided into the More Severe, those where there was pus present in tube or ovary, where tubes and ovaries were extensively diseased and abundant adhesions were present; and into the Less Severe, those where there were moderate or mild degrees of inflammation of tubes and ovaries and few adhesions or none at all.

In the list of More Severe there were 41 cases and in the list of Less Severe 44 cases. The two tables are analyzed separately and then compared. The comparison shows that there were more married women and slightly older women in the More Severe than in the Less Severe; that gonorrhoea and syphilis were more prevalent and that the symptoms had resulted more frequently from difficult labors or abortions among the More Severe, also that the tubes were closed in a large majority of the More Severe, whereas they were open in all but one of the Less Severe. Pregnancy followed in four of the More Severe and in eleven of the Less Severe. It is to be noted that all of the cases of subsequent pregnancy in both tables, except two of the Less Severe, had had previous pregnancies, so that, as far as the lists go, conservative operations on the ovaries and tubes hold out far better prospects in this respect to the parous than to the sterile women.

In none of the cases where the closed tubes were opened and new ostia formed did pregnancy result. Subsequent enlargement of a resected ovary was noted in several cases, but the enlargement was as a rule only temporary. In five cases of the extensive purulent inflammatory type, all of them gonorrhoeal and three of them syphilitic, one ovary and tube being removed in each case, the remaining ovary became diseased following operation and another operation was advised. Anatomical cure was recorded in 33 out of 57 cases who came under observation. Symptomatic cure was recorded in 60 out of 85.

The following conclusions are the result of the analysis:

1. It is advisable to do conservative operations in all cases where the ovaries and tubes are not hopelessly diseased in all parts of their structure, except on patients who are near the menopause, on patients who have pronounced gonorrhoea of long standing, and on the rare cases of malignant disease.
2. When a patient is near the menopause (over thirty-five

years of age) and has ovarian or tubal disease of any considerable degree of severity it is generally wiser to perform complete removal with or without hysterectomy, according as the uterus also is diseased or not.

3. In cases of well marked gonorrhoea of long standing, especially if the patient is constantly exposed to reinfection, if both tubes are seriously diseased and closed, total removal with or without hysterectomy is the operation of choice.

4. In certain cases of this class where the patient thoroughly understands the likelihood that another operation may be necessary at some future time and wishes to take the chances in the hope of preserving the function of menstruation, conservative operation is permissible.

5. If one tube is patent and healthy in appearance and there is enough healthy ovarian tissue to preserve, a conservative operation ought to be performed even in the presence of gonorrhoea.

6. With present methods of performing resection of the tubes, if both tubes are found closed at the time of operation, subsequent pregnancy is not to be expected.

7. In severe grades of inflammation of the appendages irrespective of causation, if the ostium abdominale of one tube is patent the prospect of subsequent pregnancy after the preservation of a portion of ovary is about one in four and a quarter, or $23\frac{1}{2}$ per cent.

8. In the less severe grades of inflammation under similar conditions of tube and ovary the prospect of subsequent pregnancy is about one in two and a quarter, or 44 per cent.

9. In women who have borne children, in both classes, subsequent pregnancy may be expected in 35 per cent, whereas in previously sterile women it may be looked for in only 5 per cent.

10. If it is necessary to remove both ovaries it is of no advantage to preserve any portion of tubal tissue, but, except under the conditions just enumerated, some ovarian tissue should be preserved in every case.

317 Marlborough Street, Boston.

SUTURING THE ROUND LIGAMENTS TO THE VAGINAL WALL FOR RETROVERSIONS AND FLEXIONS OF THE UTERUS.*

H. N. VINEBERG, M.D.

The author deemed it necessary to again describe the technique in detail, as he has found that the method has not been correctly understood.

The patient is prepared as she would be for a vaginal hysterectomy.

First Step.—The nymphæ are sutured to the skin of the thighs so as to keep them out of the way. The cervix is then seized with two vulsella and forcibly drawn outside the vaginal orifice and downwards, and the anterior vaginal wall is caught with another vulsellum near the urethral meatus and drawn upwards, thus putting the anterior vaginal wall on the stretch. With a sharp scalpel or one with a convex blade† a longitudinal incision is made, extending from the urethral mound to the vaginal attachment of the cervix. The two flaps thus created are now separated partly by blunt and partly by sharp dissection from the underlying bladder. In order to give one's self ample room generous separation of the vaginal flaps should be made. The lower angle of the flaps are then held apart and the cervico-vesical septum is divided by a semilunar incision about 1 cm. below the lowest attachment of the bladder to the cervix. Before making this incision it is prudent to pass a sound into the bladder and ascertain how far down upon the cervix the bladder reaches by gently pushing the sound downwards and forwards.

The bladder is next pushed up from the uterus with the index finger, as is done in vaginal hysterectomy.

Second Step.—A short vaginal retractor is now inserted into the anterior opening, thus keeping the bladder out of the way

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†Author's knife. *N. Y. Medical Journal*, April 7, 1894.

and exposing the vesico-uterine fold of peritoneum. The fold is caught with forceps and a transverse incision made with scissors just below their bite. Before loosening the hold of the forceps a suture is carried through the peritoneum above the point of the incision, and it is left long and clamped. Its purpose is to draw down the bladder peritoneum towards the end of the operation when the slit made in the peritoneum is sutured.

Third Step.—The cervix is pushed backward into the posterior fornix with the vulsella; thus tilting the body of the uterus somewhat forward, and with the anterior vaginal retractor in place a traction suture is carried by means of a short, stout needle through the exposed anterior uterine wall as high up as possible. With this suture the uterus is further anteverted and brought into the incision. It may take one or more additional traction sutures, each carried higher up on the uterine wall, to completely deliver the fundus through the incision.

Fourth Step.—With the index and middle fingers the adnexa, one after the other, are brought into the incision, subjected to visual inspection, and to such surgical treatment as their condition calls for. It is astonishing with what ease in the majority of cases a resection of an ovary or of a tube can be accomplished in this manner.

Fifth Step.—The adnexa having been replaced within the peritoneal cavity, the uterus is retracted to one side, and with a small fine needle a silkworm gut suture is carried behind the round ligament of the opposite side about three or four cm. from its insertion into the uterus. Some care is necessary in passing this suture to avoid the small arterial branches which supply the ligament, as a troublesome hemorrhage may occur from the needle piercing one of them.

A second suture is passed in the same way one or two cm. nearer the uterine insertion. The ends of the sutures are secured above and below with small artery clamps, which may be numbered so as to avoid confusion when it is necessary to carry the sutures through the vaginal flaps.

This procedure is repeated on the opposite side and the uterus is returned within the peritoneal cavity by pushing the fundus backwards with the fingers and drawing the cervix downwards and forwards with vulsella.

Sixth Step.—The outer round ligament suture is now carried with a leading suture through the vaginal flap at a point corresponding to the anterior lateral sulcus and as near the pubic arch as possible. The inner suture is passed through the flap at a suitable distance inward from the first. The same thing is done on the opposite side and the sutures are tied loosely in the vagina while the uterus is being held forward by means of the traction sutures. The traction sutures are then cut and removed. The upper edge of the peritoneum is next drawn down by means of the suture which is attached to it, and the slit in the peritoneum is closed by a continuous catgut suture.

Seventh Step.—In the event of a cystocele or a redundant anterior vaginal wall having been present, a strip of suitable width is excised from each vaginal flap, and the two flaps are coaptated by a continuous catgut suture.

The last couple of stitches are made to catch up the cervical tissue so as to attach the vaginal wall to the cervix, as normally obtains. This is removed at the end of forty-eight hours.

When the uterus is unusually large and heavy, or when the utero-rectal ligaments are put on high tension by anteverting the uterus, it is wise according to my experience to employ a single uterine fixation suture in addition to the round ligament sutures. This suture should not be placed too high upon the uterine wall so as to avoid the possibility of dystocia in the event of pregnancy.

Finally, any operation on the cervix that may be called for is now done, and the posterior vaginal wall or perineum subjected to any plastic operation that may be deemed necessary.

The patient is kept in bed for twelve days, at the end of which time the round ligament sutures may be removed, as may also the uterine suture if present.

Additional operations at the same sitting; with very few exceptions a curettage preceded the operation.

Anterior and posterior colporrhaphy were performed in fourteen cases. Amputation of the cervix in seventeen cases. Trachelorrhaphy in six cases.

Tait's operation for complete laceration of the perineum in two cases.

The excision of a vaginal cyst in two cases.

Salpingo-oöphorectomy in five cases.

Ovariectomy in two cases.

Conservative surgery upon the tubes and ovaries in twenty-five cases.

Thus in thirty-two cases (64 per cent) some surgical work upon the adnexae was found necessary.

IMMEDIATE RESULTS.

All of the fifty cases tabulated and three additional ones performed this year and not included in the paper have recovered from the operation. In other words, there has been no mortality in the fifty-three consecutive cases.

He drew attention to the fact that in every instance the peritoneum was opened and the adnexa visually inspected. In thirty-two cases (64 per cent) some surgical operation of a conservative nature was performed upon the adnexae.

Convalescence was uneventful in forty-eight cases. In five cases there were some complications.

ANATOMICAL RESULTS.

In only one case (XLVII) was there an absolute failure, the uterus being found in retroversion six weeks after the operation.

In a second case the uterus remained in good position for seven months, until the woman became pregnant. This was an instance of congenital retroversion, a condition in which no operative procedure meets with permanent success.

In a third case, also one of congenital retroversion, the uterus showed a tendency to return to its faulty position after a lapse of several months. If these two cases are to be included there were three failures in fifty cases or 94 per cent of cures. This percentage of cures is 15 per cent higher than that obtained by any other vaginal method.

There were satisfactory clinical cures in forty-one cases, or in eighty-two per cent.

Forty-five of the fifty tabulated cases were under observation for a period varying from four to fifty months, or on an average of twenty-two months.

Three cases went through normal pregnancies and had easy labors.

A fourth case is in her ninth month of pregnancy which has thus far progressed very favorably.

INDICATIONS.

The operation is indicated in the following conditions:

1. In all cases of mobile retroversions and flexions of the uterus in which a surgical procedure for one reason or another may be deemed necessary.
2. In the same conditions when they are associated with prolapsus uteri of the first and second degrees.
3. In all cases of adherent retroversions and flexions in which the uterus only is adherent.
4. In cases of retroversions and flexions associated with moderate disease of the adnexae, such as cystic ovaries, catarrhal salpingitis, hydrosalpinx and hematosalpinx and pyosalpinx, when the latter is of moderate size and not too firmly and extensively adherent.
5. It is the operation of predilection in women with thin, lax abdominal walls, which would offer a poor support for the uterus. The same applies to the extreme opposite condition, in women with very fat abdominal walls in whom a suprapubic operation constitutes a very serious affair.

CONTRAINDICATIONS.

It is contraindicated in the following conditions:

1. In congenital retroversions.
2. In retroversions and flexions when the broad ligaments are very much infiltrated and shortened by inflammatory disease.
3. In retroversions and flexions associated with very marked and extensive diseases of the adnexae, and also when the adnexae are less diseased but very firmly and extensively adherent.
4. In complete procidentia when there is a veritable hernia of all the pelvic organs.
5. In some rare cases of multipara in which the vagina is very deep and narrow.
6. In cases in which in addition to the pelvic lesion there are evidences of disease in the abdominal cavity, as for instance, chronic appendicitis.

FECAL FISTULAE, WITH SUGGESTIONS REGARD-
ING TREATMENT.*

I. S. STONE, M.D.

The author called attention to the importance of a careful study of the location of each fistula, and referred to the importance of free peristalsis. He claims that any narrowing of the gut on the distal side of a fistula, or even a very adherent loop of bowel would prevent the success of any method of closure. He spoke of the method of "exclusion" by anastomosis, in certain selected cases, and advised great caution in undertaking these secondary operations owing to many severe and unsurmountable complications often found. The method of Greig Smith was recommended in superficial fistula as it could be tried with comparative safety. This consists in cutting down upon the peritoneum and withdrawing it with the adherent bowel and fistula sufficiently to facilitate closure. The fistula is inverted and the external surface of peritoneum is approximated and closed by appropriate sutures. In recto-abdominal fistulae Dr. Stone suggested opening through the vagina, dissection along the upper surface of the bowel until the fistulous tract is reached, then a tube is passed through this at its junction with the rectum and allowed to remain for two weeks, when all communication between rectum and fistula should be closed. The sinus is irrigated with formalin solution and rapidly closes.

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1449 Rhode Island Ave., N. W., Washington, D. C.

INTERNAL SECRETION OF THE OVARY.*

ARTHUR W. JOHNSTON.

When the President of the British Gynecological Society, in his last Presidential address, assumes that the ovary has an internal secretion, it is incumbent on those who do not believe it to bring forward the proofs of their faith.

There is not an iota of proof that the ovary has any other function than the manufacture of eggs. For fifty years we have known that the ovary is active during intra uterine life and that it begins to ripen Graafian follicles at the sixth month of gestation; that this continues rather rapidly until after birth; that during infancy the Graafian follicles still ripen occasionally but not so rapidly as before birth, and persists in the same ratio up to puberty. At puberty the follicles ripen more rapidly, at least five or six a year, but at no time do they amount to as many as the number of menstruations in the year. This rate continues during the whole of the child-bearing period. During and after the menopause the Graafian follicles still continue to ripen. Of all the ovaries past the menopause that I have removed, I have never found one that did not possess a small number of Graafian follicles in an immature state, and have frequently found those that have recently ruptured. The ovary is in no sense a gland. Its epithelium is arranged for the purpose of being cast out and lost, and is not placed so that its secretions, if it has any, could be absorbed either by ducts or blood vessels. The adherents to the internal secretion theory claim that it is like the supra renal, the thymus or the thyroid gland. This I can state positively is not correct. Years ago I made careful studies of these organs. The thymus gland is nothing but the large lymphatic gland which does the work of the lymph structures during intra uterine life. Its lymph vessels are just the same as those of the axilla or groin. The thyroid gland and supra renal capsule have no lymphatics that

*Original Abstract of Paper read at the Meeting of the American Gynecological Society, held at Washington, D. C., May 1, 1900.

amount to much, but a very rich supply of blood vessels so arranged that each epithelial cell is closely approximated to a venous radical, thus providing for a rapid absorption of whatever secretion its cells may make. So far as we know these cells are never entirely removed except by a low form of colloid degeneration, which material is readily absorbed by the blood vessels close to it. But the ovary has a true duct through which its epithelium when cast out passes off en masse to the outer world. In the erect animals the fallopian tube has great mobility and can attach itself to any particular part of the ovary, but in the dog and wolf the fimbriae are united to each other and embrace the whole of the ovary and attach to its base, so that there is no communication between the tube and the peritoneal cavity. This difference is for the reason that the eggs in the dog are ripened in groups, and as the tube has more than one Graafian follicle to deal with at a time, it must surround the whole of the ovary so as to catch everything that comes from it, thus providing a sewer down which everything must pass which comes out of the ovary. Therefore the analogies that we have been hearing about, do not hold good, anatomically. Had the propounder of this dogma made any allowance for menstruation as a separate entity, free from the domination of the ovary, he certainly would have paused before announcing any such a doctrine. If it is a lack of an internal secretion that causes the nervous disturbances of the menopause, why is it that the little girl does not have them? But more unanswerable than this, why is it that a delayed menstruation in a child-bearing woman will produce identically the same symptoms as those of the menopause? This is apparent in all of our every-day work. Let me relate a striking instance.

Last autumn I had in my private hospital a well developed woman of thirty-two, from whom I had removed the whole uterus and both ovaries for a degenerated fibroid. Of course, she had all the hot and cold flashes and nervous disturbances that usually go with such conditions. In the adjoining room was a young lady of twenty-two, whom I had curetted for one of the worst catarrhs of the uterus I ever saw. She had for years been in the habit of having a five or six weeks' interval between her menstruations, and it so happened that her menstruation was due at the same time that I did this hysterectomy.

Until her period appeared, which was some ten days later, the complaints of the two women were identical, but their conditions totally different—one with the whole of her internal organs of generation gone and absolutely nothing with which to let off the menstrual wave, the other with all her internal organs in place, the only difference being that the flow was delayed. Instances of this sort I could multiply from my hospital records by the hundreds; and all that any of you need is to attract your attention to it to recall scores of cases of the same thing that have passed under your observation; so much so that I may lay it down as a rule that if a woman's menstruation is for any reason, except pregnancy, delayed, she is very apt to have symptoms closely approximating those of the change of life. This leads me to believe that the internal secretion of the ovary is a myth.

It is the last stand of those who have believed that the ovary dominates everything, and they have taken refuge in these recent experiments showing the immense necessity for glands that we know do have an internal secretion.

Some old German professor who heard his confrere in the chair of practice talking about the wonderful results from thyroid extract, was not going to be outdone in his scientific knowledge, so he assumed that the ovary also had an internal secretion, and immediately began giving ovarian extract to his hysterical patients, and, of course, got wonderful results. Some of you will say, "How are you going to get around these results?" You all know perfectly well that if you will be positive enough with these hysterical women you can get results with anything. I have frequently succeeded with a combination of salt and soda. This was a suggestion of some of my level-headed nurses, who, after having become worn out with the complaints of some of these people years ago, found that the more horrible the taste of the stuff they gave them the more profound the result would be. Some of you will say, "How about the results from transplantation of the ovary?" My answer is that they are so few, far between and altogether unsatisfactory that they probably belong to the same class. Those few who have been benefited have gotten it not from the ovary, but from the disturbance of the menstrual nerves produced by the secondary operation which has brought on menstruation, which you know is the one great eliminator.

Twice in my life I have brought on a menstruation by removing the appendix. In neither case was the appendix in the pelvis, but lying tightly tied down to the psoas muscle where the ligatures necessary to control the vessels of its mesentery had to go so deep that the nerve trunks coming up from the pelvis were involved. The operations were done half way between the menstruations, and at no other time had the menstruations returned in two weeks, but in both cases they followed in forty-eight hours after the operations; so with this experience I believe that if the menstrual centers in the cord have not degenerated that a disturbance of the menstrual nerves by any kind of an operation is liable to bring on an artificial menstruation, just like the one that follows the ordinary removal of the ovaries. This is reinforced by several other cases that I have seen, in which, without operation, appendicitis itself has brought on menstruation at times when it was not due.

I have talked so much about the menstrual wave before this body that I fear you are weary of it, but to understand this subject thoroughly you will have to study it more closely than these men who are now talking about the internal secretion of the ovary have done.

Nature has its great cycles of rest and work. The alternation of the seasons is the one great object lesson which we constantly have around us. The rest of the plant during the winter corresponds to the condition of the woman in the inter-menstrual period. The shedding of the leaves of the evergreen, the manufacture of its young leaves and buds, as we now see it around us, corresponds to the menstrual week. The shedding of the horns and hair of the deer is another analogy of the same sort. The molt in birds is another illustration of the same thing, for, as you know, the old feathers have to be dropped and new ones manufactured at a rapid rate. Those of you who have ever watched a pet canary will be struck with the similarity between its condition during the molt and that of your patients during the few days antecedent to the menstrual flow. The molt is always considered a critical time for birds. They all stop singing, breathe more rapidly, the exposed parts of their skin become more congested, and everything goes to show that an increased oxidation is going on through out their whole sys-

tems. The reason for this is shown in the rapid growth of the cores of the young feathers, which have to make immense masses of protoplasm in a short time. An analysis of their excretions shows that oxidation is going on much more rapidly than in the ordinary state. Just so it is with the woman. When the time arrives for the menstrual pressure to begin, associated with the congestion of the pelvis is an increased oxidation of the whole body, and, as I have said here so often before, and which has been so thoroughly proven by Jacobi, Stephenson and other workers, the result of this oxidation is an increased amount of excretion of every description. The majority of women stand this beautifully. The reason for it is, if you will allow the illustration of a furnace, the draft is what it should be, the grate bars are properly placed and the food they take burns up completely and passes off through the chimney, the ashes fall out into the ash pit leaving no clinkers, coke or cinders behind. But, unfortunately, the furnaces of many people are defective in construction. The flue does not draw as it should, the grate bars do not let in the air as is required, and the consequences are the chimney gets choked up with soot, and the fire box retains cinders, clinkers and fuel in every degree of consumption. For the lack of a better term these people have been classed as the "gouty," and they are the very people who give us the greatest trouble with the menopause. I have often said, if you will give me the family history of a patient, I can tell you positively whether she is going to have trouble in getting through with the change of life. As you all know, here in America, we do not have the explosive forms of gout to any great extent; but in our dry climate these poisons take out their force on the nervous system, so that our patients with bilious sick headaches, migraines and generally nervous conditions are the lineal descendants of European families who were loaded down with gout. Haig is undoubtedly on the right track. I do not claim that uric acid is the poison which causes all this trouble, but I do know that the uric acid group have a great deal to do with it. My friend, Dr. Rachford, of Cincinnati, has done a great deal of original work in this particular line, and I am indebted to him for most of the suggestions that have guided me in the handling of these troublesome cases. He has proven beyond a doubt that

besides uric acid there are many poisons that belong to the nitrogenous group.

You know that urea is the complete oxidation of a nitrogenous compound; that uric acid is the same material, but not completely oxidized; that the various xanthin bodies are the same substance, but still less oxidized, with paraxanthin at the foot of the group in the shape of a nitrogenous body that is only very slightly oxidized.

To take the illustration of the furnace again, urea corresponds to the ashes at the bottom of the pit; uric acid to the coke still left lying on the grate bars; the various forms of xanthin to coal less and less burned, until you come to the paraxanthin, which is the coal little more than charred.

Dr. Rachford's work has turned on the poisonous properties of these various nitrogenous bodies. He has proven that paraxanthin is the most poisonous of all, also that where you have large quantities of uric acid in the urine some of these xanthin bodies are apt to be found. Several cases of hystero-epilepsy in my practice he has proven to be directly due to the presence of xanthin bodies, and that the epileptic convulsions were nothing but the characteristic symptoms of its toxic effect. By increasing the oxidations of these patients he has gotten rid of the xanthin, and though some of the cases were four or five years old they now remain perfectly well.

It would consume entirely too much time to go deeply into this subject, but those of you who are interested in it will find it in the transactions of the Association of American Physicians, where a great deal of notice has been taken of it. It is true that Dr. Pfaff has found that the presence of ammonia in Dr. Rachford's final fluids has intensified the effect of the poisons, but as we all know that ammonia in itself is not specially poisonous and that without the paraxanthin it will not produce any such symptoms, unless it be given in large doses, it only proves that the ammonia compounds of the xanthin bodies are more readily diffusible and more violent in their effects than the substance in their pure and simple state. This is a condition, though, of many drugs, that the salt has a more violent effect than the pure article. Many of the menstrual headaches are undoubtedly due to something of the same cause. The in-

creased oxidation of menstruation in a gouty subject will increase the number of poisons towards which she has a tendency, for this increased oxidation in a menstruating, gouty woman is just like throwing more fuel on an already smoking fire.

Assuming that this is the cause of not only menstrual but menopause difficulties, I have for years treated all my cases of either sort by an increased elimination, and I am happy to say with uniformly good results. I have had but two cases which gave me trouble in getting them through with the artificial menopause, and both of them were in markedly gouty females. One of them had an uncle, a practicing physician, who brought the patient to me after a violent attack of peritonitis that necessitated the removal of the appendages. She made a prompt recovery from the operation, but in the succeeding years that followed it was interesting to note how her symptoms corresponded with those of her uncle. It was nothing more than hereditary gout accentuated by the attempts at increased oxidation every twenty-eight days.

The other case was similar in every respect. A markedly gouty history, with a chronic peritonitis that demanded a life-saving operation. Though she gave me a great deal of trouble for the first year, finally Dr. Rachford succeeded in making her very comfortable.

Dr. Rachford's work is not yet complete on these bodies and it would be unjust to him to anticipate, but I can say that, so far, his results have been extremely satisfactory as applied to my work, and besides the xanthin bodies we will ultimately find a great many other poisons which are the results of faulty oxidation and its resultant elimination.

So, then, I repeat, there is not an iota of proof, either from analogy or experience, that the ovary has any kind of an internal secretion, but that the troubles with the menopause, both natural and artificial, are due to a faulty oxidation and excretion.

One other cause of this condition is due to the intestinal infection that goes with nearly all these cases, and this allows the colon bacillus and its associates to contaminate the nitrogenous bodies with their ptomaines before they are absorbed into the blood. Faulty excretion allows the liver to become "stagnant,"

as the old practitioners used to say, thus interfering with the circulation of the portal vein. This allows the germs of intestine to lodge in its epithelial lining. This subject has been discussed before this body frequently, especially in that memorable paper of my old teacher, Dr. Goodell, on the hysterical rectum. Each effort at an increased oxidation only adds to the trouble of a sluggish portal circulation, and thus invites the very condition I have spoken of. This gives one more proof of the necessity for a careful study of the menstrual wave in all its bearings. Until we get rid of the old superstition of "ovarian influence" and such like terms that we have heard for so many centuries, the reproductive functions will never be thoroughly understood. The last few years' experience has taught me to believe firmly that the ovary, in itself, has little or no influence even on the development of a woman, and much less on her well-being after menstruation begins.

Some eight years ago I removed both ovaries from a little girl of eleven who had never menstruated, for double ovarian tumor. She was in every sense a child, and I thought there would be one case of a true female eunuch. What was my surprise a year or so ago to have one of the most beautiful women I ever saw walk into my office. It was this same child come back to show herself. I examined her carefully. Her figure had rounded out to perfection, her breasts were very large and perfectly developed; all the external organs of generation and the vagina were perfect, and the hair on the mons thick and fully grown. In every sense she was as perfect a woman as I ever saw, except that she had never menstruated. More than this, she has a beautiful voice.

You will ask how this happened. My belief is that the sexual centers had already begun to develop before the ovaries were removed, and that was all that was necessary to produce every sign of puberty except menstruation. I wish very much that the fellows of this Society would look up these cases, because I know many of you have had more of them than I have, and I would like to know whether these girls who are operated on before menstruation begins usually develop into womanhood. If this is the case, the ovary will have to be relegated to the function of producing eggs alone. When we see every other organ in the

body controlled by the central nervous system, why is it that we will persist in saying that this one little epithelial body contains all the functions known to womanhood? The only reason that I can see for it, is that it originated in an old superstition, and, like every other superstition, will last as long as men will consult the moon before planting their potatoes.

Some of you will ask, what, then, are my beliefs as to the limits of conservative surgery? My answer is, where an ovary and its accompanying tube can be left in a healthy condition so that their functions can be easily and safely carried out they should be preserved, but I have nothing but condemnation for those dangerous experiments which result in the leaving a scrap of one ovary in one part of the abdomen and a piece of a tube in another, or the transplantation of an ovary from one patient to another. Suppose you could accomplish what you are driving at—the preservation of menstrual life—what good would it do? It is only postponing the menopause; and the troubles that a woman has at the menopause are hereditary, and what difference does it make whether she goes through them early or late? All this talk about the shrinkage and atrophy of the external generative organs at the artificial menopause has not held good in my experience, except where I have been careless enough to overlook a metritis or vaginitis. In a few cases of this kind, in my early practice, I did have a form of cirrhosis of the vagina set in, but after I found that that was the cause of the trouble, and then proceeded to cure it with yellow oxide of mercury and the like, I have had no trouble of this kind.

So, in closing, I must say that all this furore about the internal secretion of the ovary only results in bad work, as it gives a cloak for leaving patients in dangerous conditions, and an excuse for not doing the tedious part of our clinical work.

Cincinnati, Ohio.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE — AN HISTORICAL AND EXPERIMENTAL RESEARCH.*

REUBEN PETERSON, M.D.

THE experimental work forming the basis of this article was undertaken with the view of studying the changes resulting from anastomosing the ureter with the intestinal tract, and of determining whether the procedure could with safety be employed in human beings. The important and far-reaching changes in the kidneys and ureters resulting from a bacterial invasion from the septic cavity into which the ureteral orifices were implanted had not been satisfactorily studied. The question will always arise whether infection of the kidney will invariably follow its ureteral union with the intestine. If this be true, can perfection of operative technique reduce this infection to a minimum so that the kidney can recover and remain a useful organ? These questions must be answered before the surgeon will subject his patient to an operation, from which, once performed, there is no retreat.

The first portion of the article has been devoted to an exhaustive review of the literature of the subject. The second part has been given over to the description of the author's own experiments, from which, together with the work of others, general conclusions have been drawn.

Perhaps the most striking fact revealed by a study of the experimental work which has been done on uretero-intestinal anastomosis is the exceptional high mortality accompanying the operation, whether one or both ureters are implanted in the bowel. Out of 60 dogs operated on by various experimenters where one ureter was implanted into the intestine, there were 35 recoveries, or 61 per cent mortality, while out of 63 dogs undergoing bilateral ureteral anastomosis only 8 survived, or a mortality of 87 per cent.

*Author's Abstract of Paper read before the American Gynecological Society at Washington, D. C., May 1, 1900.

The causes of death were various, but in a general way it may be stated that the majority resulted from peritonitis through a giving way of the uretero-rectal stitches, and the subsequent escape of urine into the peritoneal cavity, or to an overwhelming infection of the kidney, ascribed to nephritis or uremia.

A careful review of the different operative procedures shows that the primary mortality was large by all methods. The method which called for the least amount of suturing of the ureter itself was found to give the best results. The post-mortem on the animals surviving the operation for any length of time in nearly all instances showed unmistakable evidence of stenosis of the ureteral orifice, hydroureter, hydronephrosis, and pyelonephritis. In no case was it demonstrated beyond dispute that the kidney was normal after the corresponding ureter has been implanted into the rectum.

The author then gives a short abstract of 28 uretero-intestinal implantations in man. A critical survey of these 28 operations shows the primary mortality, 32 per cent, to be exceedingly high. If to this be added the uncertainty as to subsequent renal infection, in the cases surviving the operation, it must be admitted that uretero-intestinal anastomosis is not an operation of choice.

The subsequent history of the successful cases places the operation in a still more unfavorable light. Of the 19 recovering, 2 died later of pyelonephritis and 2 of uremia after implantation of the second ureter. The post-mortem in one of these revealed a fibrous condition of the kidney whose ureter had been implanted fourteen months before. No autopsy was secured in the second case, but from the similarity of symptoms it is fair to assume that the pathologic conditions were the same as in the first case.

Of the four surviving cases with implantation of one ureter, one is living and well at the end of eight years, but it is not stated that the discharges from the rectum contain urine. Renal infection was responsible for death in each of the nine fatal cases.

In 1894 Maydl reported two cases of exstrophy of the bladder operated on by an original method consisting of the implanta-

tion of the vesical trigonum with its ureteral orifices into the sigmoid flexure. The predominant idea of this operation was the preservation intact of the ureteral orifices and their utilization as a means of preventing an ascending renal infection.

In order to ascertain whether this theory is borne out by clinical facts, the author collected and tabulated 36 cases of operations performed according to this technique. Of the 36 cases, 5 died from the operation and 2 cases four and fifteen months later of pyelitis. This operative mortality is surprisingly low for such a difficult major operation. Thirty-three of the operations were for exstrophy of the bladder, there being 26 males and 5 females.

The sphincteric control over the urine is reported as remarkably good, it being noted as poor in only one case. There were six fistulæ following the operations, all noted as subsequently closing. The primary and secondary results of uretero-trigono-intestinal anastomosis are so much superior to those of ureteral implantation without the preservation of the vesical ureteral orifices as to always demand the performance of the first operation in preference to the latter.

A summary of nine cases of uretero-intestinal anastomosis through the formation of rectal fistulæ show that six of these were for exstrophy of the bladder, with a mortality of 67 per cent. Two vesico-vaginal fistulæ were both cured, and there were two cases of vesico-vagino-rectal fistulæ.

Frank's experiments have shown that in dogs vesico-rectal anastomosis is a comparatively safe procedure; that the bladder remains free of feces, and that infection of the kidneys does not result in some of the cases operated upon.

The author's experimental work covering a period of eighteen months is now given in detail. The bacteriologic and microscopic work was conducted by Dr. F. Robert Zeit of the Post-Graduate Medical Board. Dogs were used for all experiments, and the most aseptic technique was employed.

Three series of experiments were conducted;

SERIES I.—Bilateral uretero-intestinal anastomosis. Both ureters were implanted simultaneously in the rectum in 28 dogs, with 5 recoveries and 23 deaths. Various forms of operation were employed, the most common being an incision

made in the bowel wall through the serous and muscular coats, the ureters being implanted in the rectum through small incisions made in the mucosa; they were held in place by sutures passing through the mucosa and either their outer coats or peritoneal covering. The closure of the incision by Lembert's sutures completed the operation.

In most of the cases death ensued from general peritonitis accompanied by extravasation of urine into the peritoneal cavity. This escape of urine in most instances arose from the slough at the site of the anastomosis.

The ureters were, as a rule, dilated, although the ureteral orifices were patent.

In the five dogs recovering, the operative results may be termed fairly good. In only one case was a single ureter found not to be patent. In four of the cases, however, the ureters are noted as being dilated. In one there was pyoureter, in another hydroureter.

Three of the cases died of pyemia, secondary infection and endocarditis, 40, 84 and 39 days respectively after operation. In one dog living 13 months after the operation, there had been a recovery from the infection with resulting contracted kidneys.

SERIES II.—Lateral uretero-intestinal anastomosis. Sixteen dogs operated upon, with 3 recoveries; 12 died of general peritonitis due to leakage through stitch holes. The object of these operation was to unite the ureter to the bowel by a lateral anastomosis so that dilatation of the ureter and ascending infection could be avoided.

In two of the dogs recovering, through faulty technique the intestinal mucous membrane closed and stenosis resulted. In the other dog pyelonephritis resulted in a short time, although there was no obstruction to the flow of urine.

SERIES III. — Uretero-trigono-intestinal anastomosis. Twenty-one dogs operated upon; 12 died of peritonitis through the sloughing of flap; 4 died of peritonitis from other causes.

The first 12 cases died from ligating the vesical arteries supplying the flap. In 9 experiments where these arteries were preserved, there were 5 recoveries from the operation.

The author's modification of Maydl's technique is then described in detail. In brief, it is the uniting by means of a con-

tinuous suture of a rectangular bladder-flap containing the ureteral orifices to the bowel after the latter has been opened. A review of the five experiments where the dogs recovered shows that in one the ureter was occluded with the formation of an atrophic kidney. Of the four remaining cases one had a non-infected kidney where the trigonum was implanted, pyelonephritis on the other side where uretero-rectal anastomosis had been made. One died in 44 days from active pyelonephritis where the musoca of the ureteral orifice had been accidentally removed. One lived two months without signs of infection of the kidneys; one had pyelonephritis after 8 days where the mucosa was removed from the natural orifice and no sign of kidney infection in the other kidney, whose orifice was implanted intact.

The general conclusions are as follows:

1. The primary mortality of uretero-intestinal anastomosis both in experimental work on animals and in man is exceedingly high.

2. The best technique is that requiring the least amount of suturing of the ureters themselves.

3. All efforts to prevent ascending renal infection in animals or in man where the ureter has been implanted without its vesical orifice have proved futile.

4. It is impossible to determine in advance the extent of the infection which will result from uretero-intestinal anastomosis.

The patient may die in a few days of a pyemia or in a short time of pyelonephritis, or in rare cases may recover from the infection with resulting contracted kidneys.

5. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable as in exstrophy of the bladder, vesico-vaginal or uretero-vaginal fistula, or for malignant disease of the bladder.

6. The results of uretero-intestinal anastomosis through the formation of vesico-rectal fistulae have not been favorable up to the present time.

7. The success of Frank's experimental work in vesico-rectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory.

8. The primary mortality of uretero-trigono-intestinal anastomosis is low for an operation of this magnitude.

9. While it cannot be denied that ascending renal infection may occur after this operation, the infection, as a rule, is of such a type that the chances of the individual's overcoming it are good.

10. Hence the operation of implanting the vesical flap with its ureteral orifices into the intestine is a justifiable surgical procedure.

11. There is no valve guarding the vesico-ureteral orifice; nor does the circular muscle layer of the ureter, nor the bladder muscles themselves, act as a sphincter.

12. It has been abundantly demonstrated by experimental and clinical work that the rectum tolerates the presence of urine, and acts as a good substitute for the bladder, and that good control over the anal sphincter is maintained.

103 State Street, Chicago.

THE TREATMENT OF FULL-TERM ECTOPIC GESTATION. SHOULD NOT THE CHILD RECEIVE MORE CONSIDERATION?*

EDWIN B. CRAGIN, M.D.

IN discussing the treatment of ectopic gestation when the fetus is viable, three problems present themselves:

1. Is the viable ectopic fetus worth saving?
2. Do attempts to save the child seriously increase the mortality or morbidity of the mother?
3. What is the best procedure at the time of operation?

During the sixteen months, from July, 1898, to November, 1899, it fell to the lot of the writer to operate at the Sloane Maternity Hospital upon three cases of full-term ectopic gestation, in two of which the fetus was dead at the time of operation; in one the child was alive and still lives, as do the three mothers. These cases, though few, may help in solving the above problems.

Is the viable ectopic fetus worth saving? Judging from the

*Author's Abstract of Paper read before the American Gynecological Society, at Washington, May 2d, 1900.

three fetuses, whose photographs are presented, we should answer in the affirmative, the living child being the least perfect of the three, yet she was the pet of the hospital.

Do attempts to save the child seriously increase the mortality or morbidity of the mother?

The writer believes that in the hands of competent operators the maternal mortality is at least not greatly increased if the child's life receive consideration.

What is the best procedure at the time of operation?

One of the first problems presented is: When is the best time to operate, (a) when the fetus is alive, or (b) when the fetus is dead?

When the fetus is alive, with the mother under careful observation, and in the absence of unfavorable symptoms on her part, at about $8\frac{1}{2}$ months of gestation is the most desirable time for operation in the interest of both mother and child.

When the fetus is dead, in the absence of unfavorable symptoms on the part of the mother, the best time to operate is from two to four weeks after fetal death.

As to the route by which the tumor shall be attacked, with the exception of the cases where suppuration has taken place, the abdominal route is the path of choice.

With a dead fetus, the placenta and most, if not all, of the sac can usually be removed at the operation for the delivery of the fetus. With a living fetus, when the abdominal incision has been made and the sac exposed, the most important step in the whole operation should follow, viz.: a careful examination of the attachment and vascular supply of the placenta and sac.

Of course one would like to remove both placenta and sac, but there are two implantations in which removal should not be attempted:

1. A placenta spread out over the intestines.
2. A placenta spread out over the large pelvic vessels.

Although in a few cases careful examination will show that the attachment of the placenta is such that its maternal vascular supply can be ligated and checked, and here removal is indicated, in the majority of cases, with a live fetus, more mothers will be saved by leaving the placenta at the primary operation than by removing it.

It is desirable to isolate the placenta and sac as far as possible from the general peritoneal cavity by stitching the sac to the abdominal wound. If this cannot be done, isolation may be accomplished by gauze packing. In conclusion, as a result of his study and experience, the writer believes:

1. That the viable ectopic fetus is worth saving.
2. That within the limitations above outlined attempts to save the child do not seriously increase the mortality or morbidity of the mother, hence
3. In the treatment of full-term ectopic gestation, the child should receive more consideration than it at present enjoys.

62 West 50th Street, New York.

AN APPRECIATION OF KELLY'S METHOD OF REMOVING THE FIBROID UTERUS BY THE ABDOMEN.*

A. LAPHORN SMITH, B.A., M.D., M.R.C.S.,

England Fellow of the American and British Gynecological Societies; Professor of Clinical Gynecology in Bishops University; Gynecologist to the Montreal Dispensary; Consulting Gynecologist to the Women's Hospital; Surgeon-in-chief to the Samaritan Free Hospital for Women; Surgeon to the Western Hospital, Montreal, Canada.

TWENTY years ago he was strongly opposed to operative treatment of fibroids on account of the high mortality then prevailing among the best operators. Ten years ago he became a strong advocate of Apostoli's method of employing electricity, by which he had cured the hemorrhage permanently in sixty-three out of a hundred and two cases, in ten years. Eight years ago Price lowered the mortality enough to induce him to operate in certain cases with the *serre nœud*. Baer farther reduced the mortality, and he adopted his method and operated oftener. Three years ago Kelly perfected an ideal method which has almost no mortality and which he (Lapthorn Smith) had adopted, and to which he gave the preference over all other treatment in every

*Author's Abstract of Paper read at the Meeting of the American Gynecological Society, at Washington, D. C., May 1, 1900.

case of fibroid suffering enough to consult him. He claimed that he had acted consistently throughout, being guided by the one test question, "What is the Mortality?" In his last ten successive cases, seven last year and three this year, all had recovered. Therefore the operation was now almost devoid of danger, while it was absolutely effective. Kelly's method is by far the best, and to it, the author believed, was due the absence of mortality in these ten cases. The great advantage of Kelly's method is that we begin on the easy side, and after securely tying the ovarian round ligament and uterine arteries and separating the bladder, we cut across the cervix and roll the tumor out, thus obtaining plenty of room to tie the arteries from below upwards. Another great advantage of this method is that there is much less danger of injuring the ureters. This accident is most likely to happen on the most difficult side; that is, the side where the tumor fills all the space between the uterus and the wall of the pelvis. But it is precisely on this side that the tumor is dragged away from the ureter while it is being rolled out, and by the time that it becomes necessary to cut anything on that side the ureter is at least two inches away and quite out of danger. Doyen's method has this advantage on both sides, because he pulls the tumor off the bladder and ureters and from the first cut he is getting farther and farther away from the bladder and ureters. But Doyen's method has the fatal objection of opening the vagina and thereby increasing the time of anæsthesia, the loss of blood and the risk of infection, besides the æsthetic one of shorting the vagina. The author lays even greater stress than Kelly does on the importance of feeling for each individual artery and tying it before cutting it and then putting a second ligature on it, as the first one may loosen after the tension of the tumor has been removed. He also strongly advises chromicised catgut prepared by each operator himself, or else red cross cumol catgut prepared by Johnson, of New Brunswick, N. J., which he has found reliable. Besides the six principal arteries there are two small arteries which require tying on each side of the cervix. There is no need of disinfecting the stump beyond wiping away the little plug of mucus; but the cervix should be hollowed out so as to make anterior and posterior flaps, which are securely brought together before sewing up the peritoneum. The

omentum if long enough should be brought down to meet this line of suture, thereby preventing the intestine from sticking to it, or to the abdominal incision.

The author is opposed to leaving the ovaries and tubes, although he admits that in young women by so doing the discomforts of the premature menopause are diminished. But in the majority of cases the appendages are diseased and we run the risk of the whole success of the operation being marred by leaving in organs which will sooner or later cause more symptoms than did the fibroid tumor itself. His experience of leaving in ovaries or portions of ovaries has been most unfortunate, having received no thanks for his conscientious endeavors but a great deal of blame for having failed to cure the pain, which, in the patient's estimation, was much more important than the tumor.

He was also much opposed to myomectomy; the operation was quite as dangerous as hysterectomy; there was very seldom any reason for it, most of the women who have fibroids being at an age too advanced to raise children to advantage or having passed the child-bearing age altogether. After submitting to such a serious operation the patient had a right to be guaranteed against a second or a third one for the same disease. So many women have been disappointed by these incomplete or so-called conservative operations that their friends, who really could be cured by an operation, hesitate to undergo it. He would make an exception, of course, in case of there being apparently only a single polypus, no matter how large, or a single pediculated subperitoneal tumor.

He held the opinion that all fibroid uteri should be removed as soon as discovered, because the woman with a fibroid is an invalid not only from the hemorrhage which may not be great, but from reflex disturbances of digestion and circulation. Besides, every day it grows, its removal is becoming more dangerous and the chances of its becoming malignant are greater.

He was opposed to a preliminary curetting because it was unnecessary, and second, because when done it was seldom done effectually; having examined fibroid uteri immediately after removal which had been curetted just before, he had found only about a twentieth part of the uterine mucosa removed.

He was strongly opposed to vaginal morcellement, which is not to be compared with Kelly's method. It is much more dan-

gerous, much more difficult and keeps the patient a much longer time under the anaesthetic. The operation is carried on in the dark and the ureters are frequently wounded, while complications such as adhesions of the vermiform appendix and tears of the intestine, which are easily dealt with by the abdomen and the patient in the Trendelenburg posture, are almost impossible to manage when working from the vagina. Moreover, nearly all women with fibroids are nulliparous and the vagina is consequently narrow; they are nearly all elderly and the passage is consequently inextensible. No more unsuitable class of patients could therefore be chosen for this most difficult vaginal work. The author strongly advises the closure of the abdomen with through and through silk worm gut sutures, left in for three or, better still, four weeks. If not tied too tightly, and if dressed with boracic acid in abundance, the one dressing, or at most, two will suffice from the beginning to the end of the case. Besides they can be passed very quickly, thus saving ten minutes in the duration of the anaesthesia.

NEW YORK OBSTETRICAL SOCIETY.

Stated meeting, April 10, 1900.

THE PRESIDENT, DR. CLEMENT M. CLEVELAND, IN THE CHAIR.

Dr. E. H. Grandin presented a specimen of Pyosalpinx and Ovarian Cyst which he had removed from a woman on whom he had operated two years previously for a pyosalpinx of the other side. At the first operation he had punctured many small cysts in the left ovary, but the cystic degeneration had returned. At the first operation he had suspended the uterus from the parietal peritoneum by denuding the anterior surface of the uterine fundus and suturing it to the parietal peritoneum. The etiology of the pyosalpinx was probably gonorrhoea.

Dr. Grandin questioned the advisability of trying to save the appendages if it became necessary to remove those of one side for actual disease.

Dr. Boldt agreed with this view, and Dr. A. Palmer Dudley

said that he believes it is risky to do conservative work upon tubes which are the seat of a gonorrhoeal pyosalpinx. Dr. Boldt took exception to Dr. Grandin's calling his method of operation a suspension of the uterus as in suspension no denudation is done.

Dr. Grandin showed a specimen of Right Ovarian Cystoma and Left Cyst of the Broad Ligament which he had removed by hysterectomy. The ovarian cyst had been first removed and the ovarian artery on the left side tied. Anterior and posterior flaps were then made and the uterine artery on the right side had been secured, and finally the uterine artery on the left side. The left broad ligament and cyst had then been exsected. This method he preferred to packing and draining broad ligament cysts.

Dr. Herman J. Boldt showed a specimen of Chronic Catarrhal Appendicitis, caused by two fecal concretions in the tip of the appendix.

Dr. Boldt presented a Submucous Fibroid removed from the Fundus by Splitting the Cervix. The patient was a woman who had been several times curetted without avail. Dr. Boldt advocated the incision of the cervix and opening of the anterior wall of the uterus in preference to forcible dilatation. Chromicised catgut must be used to close the uterine wound.

Dr. Grandin said that he preferred to split the uterus posteriorly for the purpose of digital examination.

Dr. Joseph Brettauer said that he too preferred posterior section of the uterus in some cases as there was less danger of injuring neighboring organs.

Dr. Boldt said that he prefers incision to dilatation, but has no choice for the anterior incision.

Dr. Boldt showed a Uterine Fibroid Polypus in which the vaginal portion of the cervix was also split. He next showed a uterus with Multiple Fibroids removed by Vaginal Hysterectomy, also a Fibro-Myomatous Uterus removed by Abdominal Hysterectomy, from a patient who gave no symptoms of compression despite the fact that the tumor filled the true pelvis.

Dr. Boldt next presented a specimen which had been removed by Vaginal-Hystero-Salpingo-Oophorectomy. The pa-

tient had had frequently recurring attacks of pelveo-peritonitis following a gonorrhœal infection and was in almost constant pain.

Dr. Boldt's next specimen was one of Chronic Salpingo-Oophoritis, in which the ovary showed unusually marked microscopic changes of chronic oöphoritis. The patient had suffered from dysmenorrhœa and dyspareunia and was sterile.

Dr. G. W. Jarman asked if the sterility was due to the diseased condition of the ovary.

Dr. Boldt replied that three months after the operation the patient had become pregnant.

Dr. R. S. Talbot presented a specimen of Ectopic Gestation, one of Multiple Fibroids of a Four Months' Pregnant Uterus, and one of Suppurative Fibroids in a patient of sixty years.

His last specimen was one of Multiple Dermoid Cysts in which the Fluid became Solid. In the discussion of the last case, Dr. Dudley said that it is well known that the contents of a dermoid cyst may become solid if allowed to stand. This material seems to be especially harmful if it enters the peritoneal cavity and great care must be taken in opening the cysts during operation on this account.

Dr. W. Gill Wylie read the paper of the evening: "A Clinical Study of the Functional Disturbances of the Ovary." He said that his purpose was to show the relationship of functional disturbances of the uterine appendages, particularly the ovary, to abdominal surgery. The speaker did not believe in removing cystic or so-called micro-cystic ovaries or those not complicated by occluded tubes, nor does he remove the ovaries for the control of uterine hæmorrhage. He has seen no good result from ovariectomy done for epilepsy or for mental diseases that seem to be connected with functional disturbance of the tube and ovaries. He referred particularly to the cases of young women who are not developed physically; they complain of dysmenorrhœa, and examination reveals a more or less developed uterus and somewhat enlarged ovaries. Such patients usually complain of ovarian pain and it is these cases which are frequently submitted to ovariectomy. The author does not believe that the ovaries are sufficiently diseased in the majority of cases to warrant their removal. He regards them as instances of

functionally disturbed ovaries due to the imperfect development of the uterus, more or less functional disturbance of ovulation and impaired general health. In these patients the function of ovulation becomes arrested and a cyst is formed, which though it gives rise to some pain and discomfort, yields to proper treatment. The removal of the ovaries often aggravates the symptoms while attention to the general health and moderate treatment will suffice to restore the patients to their normal condition.

In the discussion Dr. Boldt said that he was unfamiliar with the term "micro-cystic" ovary. He said that the reader of the paper had described a pathological condition, not a functional disturbance, and that the question was only whether these cases should be operated. Slight cystic degeneration of the ovary can be successfully treated by hygienic measures and need not be operated. He regards all cases of slight cystic degeneration of the ovary as due to a chronic ovaritis.

Dr. Ralph Waldo asked the reader of the paper if he would take out the ovaries when hysterectomy is done in the face of extensive adhesions, to which Dr. Wylie replied that he would not unless the tubes were occluded.

Dr. Henry C. Coe spoke of the intimate relation between an increase in weight and the diminution of ovarian products. With the reduction in weight the menstruation returned. In one case he had found an atrophy of the ovary. This he considers a true functional ovarian disturbance.

Dr. J. E. Janvrin agreed with Dr. Boldt that many of the slight cases of cystic degeneration recover without operation. He regards the condition described by Dr. Wylie as pathological and not as functional. When there is a co-existing endometritis he treats that with the sharp curette and advises hot douches, and the patient usually recovers. He believes that the endometritis is secondary to the pathological condition affecting the ovary.

Dr. Abram Brothers has seen cases in which a diagnosis of cystic ovary has been made and the tumor rupture before operation took place. He thinks that accounts for many swellings of the ovary and that in the enlargement of cystic ovaries, real haematoma is often found.

Dr. Dudley confined his remarks to the etiology of the condition. He thinks it due to a variety of causes,—tight lacing, chronic constipation, long continued holding of the urine, the state of the uterus or chilling of the pelvis. Attention to the restoration of the circulatory balance will cure many cases.

Dr. Grandin disagreed with Dr. Wylie in the terminology. He believes that ovaries large enough to feel diseased are not functionally disturbed but organically diseased, especially if the woman complains of pain and an undersized uterus is to be felt.

Dr. Wylie in conclusion said many of these ovaries which he had removed in former years had been reported by Dr. Welch as practically normal. Now he is more conservative for he believes that no tubes or ovaries should be removed unless there are adhesions about the ovaries and the tube is occluded. He defined functional disturbances as those which corrected themselves under simple treatment.

FAVORITE PRESCRIPTIONS.

Dr. J. W. Wainwright, of New York, suggests the following:

FOR IRRITABLE BLADDER.

R_x—Salol,
 Tinct. hyoscyamus. aa dr. 2
 Infusion of buchu q. s. ad. oz. 6
 M. Sig: Tablespoonful three times a day.—Fothergill.

FOR UREMIA.

R_x—Ext. pilocarpi alc.,
 Ext. scillae,
 Resin jalipe,
 Resin scammonia. aa grs. 15
 M. Ft. pil. No. 20. Sig.: Four or five pills daily during as many days.

FOR ALKALINE URINE.

R_x—Acidii boraci. dr. 2½
 Ext. uva ursæ fl.,
 Ext. hyoseyam. fl.,

- Ext. lupulin fl.aa dr. 4
 Syr. zingerberis.oz. 2
 Aquae q. s. ad.oz. 6
 M.—Sig.: Two teaspoonfuls in water after meals.

FOR ACID URINE AND FREQUENT URINATION.

- R.—Lithii citratis.oz. 2
 Tinct. opii camph.oz. 1
 Infus lupulini q. s. ad.oz. 16
 M. Sig.: Tablespoonful in water after meals.

DIURETIC FOR CHILDREN.

- R.—Potassi acetas,
 Potassi nitras.aa gr. 15
 Oxymal squill,
 Syr. sarsapill. Co.aa dr. 2½
 Infus. juniper berries.oz. ½-3½
 M. Sig.: To be taken during the day.

FOR CYSTITIS—CHRONIC.

- R.—Ext. uva ursæ.dr. 6
 Tinct. hyoscyami.dr. ½
 Tinct. opii camph.oz. 1½
 Liq. potassae.dr. 2
 Tinct. lupulini.dr. 3
 Syrupus simp.oz. ½
 Aq. menth. pip. q. s. ad.oz. 6
 M. Sig.: Dessertspoonful twice daily.

FOR GOUT.

- R.—Tinct. colchici sem.gtt. 15
 Magnesia carb.gr. 6
 Magnesia sulph.dr. ½
 Aq. menth pip. q. s. ad.oz. 1
 M. Sig.: Give in one draught and repeat according to conditions.

ANOTHER—GARROD'S GOUT PILLS.

- R.—Ext. colchici acet.,
 Ext. rhei,
 Ext. aloes soc.aa gr. 12
 Ext. belladonna.gr. 2
 M. Ft. pil. No. 10. Sig.: One pill at bed-time twice a week

FOR THREATENED UREMIA.

℞.—Pilocarpin.....gr. $\frac{1}{2}$ -1
 Acid hydrochlor. dil.....dr. 2
 Aq. dest.....oz. 2

M. Sig.: Teaspoonful every three hours.

FOR NOCTURNAL INCONTINENCE OF URINE.

℞.—Antipyrin.....gr. 8

Sig. Give such a powder at bed-time and continue until habit is corrected.

FOR NEPHRITIS.

℞.—Potassii bitart.....30.0
 Potassii sulph.....15.0
 Squills pulv.....8.0
 Antimon et potassii tart.....0.6

M. Sig.: Teaspoonful in tumbler of water every four hours until active purgation and free diuresis is obtained.—Eberle.

FOR ACUTE CYSTITIS.

℞.—Ext. buchu.....fl. oz. 2
 Potassii cit.....dr. 3
 Spir. æther nit.....dr. 4
 Syrupi q. s. ad.....oz. 8

M. Sig.: Dessertspoonful every four hours;

or,

℞.—Bella succi.....gtt. 20
 Sodae borat.dr. 2
 Acid benzoic.....gr. 20
 Tinct. opii camph.....oz. $1\frac{1}{2}$
 Ol. gaultheriae.....gtt. 12
 Syrupioz. 2
 Aq. dist.....oz. 4

M. Sig.: Dessertspoonful four times a day.

OR

℞.—Ext. hyoseyami.....0.4
 Ext. cannab. ind.....0.4
 Sacch alb.....5.0

M. Ft.pulv. No. 12. Sig.: One three times day.—Ultzmann.

R.—Canada Balsam..... 20.0
 Calc. magnesia..... 2.0
 Soap,
 Benzoin, aa q. s. ft. pil. No. 100

M. Sig.: At first four times a day, afterwards five times a day.

FOR CHRONIC OR IRREGULAR FORM OF GOUT.

R.—Sodii bicarb.....gr. 45
 Acid benzoic.....gr. 40
 Sadoe phosph.....gr. 80
 Aq. bullienoz. 1½
 Solve et ad
 Aq. cinnamon.....oz. 3

M. Sig.: Dessertspoonful three times a day.

FOR RELIEF OF PAIN AND VESICAL SPASM.

R.—Ext. opii.....gr. 6.
 Ext. hyoscyami.....gr. 3

Olie theo. bromat. q. s. ft. suppository No. 6. Sig.: Introduce one into the rectum and repeat in two hours if required.

FOR PROSTATITIS.

R.—Ichthyol.....gr. 5-12
 Ext. belladonna.....gr. ¼

Coca butter q. s. for suppositories No. 1. Sig.: Two or three such suppositories daily.

FOR PAIN IN CYSTITIS.

R.—Ext. hyoscyami.....gr. ½
 Camph. mono. brom.....gr. 2
 Morph. sulph.....gr. ½

Ol. theobromot q. s. No. 2.

FOR IRRIGATION OF THE BLADDER.

R.—Acidii borici.....dr. 1
 Sodii borat.....dr. ½
 Sodii chloridi.....gr. 15
 Aquapint 2

M. Warm to 100 deg. F. and use through double cuneate catheter.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

HENRY NELSON POTTER, M.D.

This disease or form of meningitis is really an affection of childhood, for while it may make its appearance in adult life, a large majority of cases are seen in early life.

It is a modern disease as far as can be discovered, although it is very probable that it occurred during the previous centuries; but the fact cannot be ascertained with certainty. For an exact knowledge of this disease, we are indebted to the last few decades. The first epidemic prevailed in Geneva in 1805. Then followed epidemics in Grenoble in 1814 and in Vecoul in 1822. The disease appeared in France in 1837; Italy, 1839; Algiers, 1839; Spain, 1844; Denmark, 1845; Great Britain, 1846; Sweden, 1854; Norway, 1859; Holland, 1860; United States, 1842. As has been mentioned, Germany saw the new disease in 1822. In Austria the disease appeared in 1865; in Russia, 1864. Mild epidemics occurred in Turkey and Greece during the years 1868-72.

Etiology.—While it is very probable that this disease is due to a micro-organism, it is still to be proven conclusively. If it is not due to the invasion of micro-organisms, it is possible that it will be somewhat difficult to find a cause. The disease is not apparently contagious from man to man directly, and it has been suggested that the virus may be transmitted through one of the lower animals. The disease attacks young people mostly, with no great distinction of sex. It is believed by some authorities that in epidemic times, the presence of an acute disease, especially pneumonia, may act as a predisposing cause.

As regards the micro-organism theory, it might be said that the relation of the pneumococcus to this disease, as a cause, is

not satisfactory. It has been demonstrated that another micro-organism exists in the meningeal exudate, whose individuality is positive. Its characteristic is that it appears in the form of a diplococcus, frequently as a tetracoccus, and is usually found within the pus cells. This meningococcus intercellularis is found in the bodies of those dying of cerebro-spinal meningitis. In cases examined, a spinal puncture yielded a turbid, sometimes even a purulent fluid, which contained pus corpuscles in great numbers. Within these there was always discovered the diplococcus or tetracoccus, and in such numbers and arrangement, as to remind one strongly of the behavior of the gonococcus. Such examinations have proven that a meningitis produced by the pneumococci is seldom recovered from and frequently produces death in a few days, while in epidemic cerebro-spinal meningitis, about one-half or one-third die, and the duration of the disease often lasts for weeks or months.

Symptomatology.—In a few cases the disease shows slight premonitory symptoms, as headache, nausea or malaise; but generally the disease begins suddenly with severe headache, and very often a rigor, so that the patient has to give up at once. The patient also suffers from pain in the back and limbs, vomiting and fever. The headache is chiefly occipital, but may be frontal or temporal; there is stiffness of the muscles of the back of the neck, and the head is drawn back by the contraction of the deep muscles; the dorsal and lumbar muscles may be affected, so that the back is kept straight, or even arched with the concavity backward. Frequently pains extend down into the muscles of the lower extremities, and cutaneous hyperæsthesia may be present. In addition to these symptoms, referable to irritation of the roots of the spinal nerves, there are others due to implication of the cranial nerves. There may be ptosis or strabismus, contraction or dilatation, or inequality of the pupils; sometimes contraction of the facial muscles; but trismus is rare. Optic neuritis and purulent irido-choroiditis occur, and conjunctivitis and keratitis probably from external irritation. It is not uncommon to have pain in the ear. Tinnitus and defective hearing, and suppuration of the labyrinth or of the tympanum may occur. Sometimes there is a deficiency of the sense of smell. Drowsiness, delirium and coma, with or without con-

vulsions, follow, and death takes place with varying rapidity in different cases. While fever is present from the first, it runs no regular course; it is remittent or intermittent, or perhaps normal for a day or two, and then rises to 102° or 103° , but seldom exceeds 104° ; a fatal termination is occasionally preceded by a temperature of 108° or 109° . With recovery the temperature falls slowly and irregularly. One of the most important features of this disease is the occurrence of cutaneous eruptions, of which herpes facialis is the most frequent. These eruptions appear early in the illness, as frequently in severe as in mild cases, and in more than half, altogether. The eruption often covers a large part of the face, and may be bilateral. Sometimes it affects the trunk or limbs. There may be urticaria, erythema, and purpura. It is not uncommon for the joints to become inflamed, hot, red, painful and swollen, but this condition generally subsides. We very often find the abdomen retracted. There is not unfrequently polyuria. Sometimes the urine may contain a little albumin or a trace of sugar. The pulse is generally quick and perhaps irregular.

The different varieties and sequelæ will be mentioned under this heading. Some cases may prove fatal in a few hours or days, while others get well, rapidly, in a few days. A majority of cases last from fourteen to twenty-four days. We recognize remittent and intermittent forms, in which the fever is much less or absent for periods of two or three days at a time. There is a "typhoid" form with delirium, dry brown tongue, involuntary evacuations and bedsores.

The sequelæ are deafness which is most common from the lesion of the internal and middle ear. In very young children deaf-mutism is a necessary result. We very often find the vision impaired. Chronic hydrocephalus is another result of the preceding inflammation, and may have for its symptoms, headache, convulsions, weakness of limbs, etc. Hemiplegia, paraplegia and aphasia may also occur, but these conditions are generally of a transitory nature, if they appear first within a short time of the illness.

The symptoms have been given in general, but as there is such a marked difference in the behavior of cases of this disease, it has been deemed best to follow the symptoms as they *may* oc-

cur, with the way they *do* occur in the different forms, although there may be a slight repetition of what has already been referred to. The classification of the different conditions in cerebro-spinal meningitis is best divided into four forms, viz.: common, fulminant, petechial and abortive, and they will be described in the same order.

The Common Form.—The disease generally begins abruptly, and if prodromes exist they are headache, vertigo, fatigue and muscular pains, which, however, generally disappear as the disease is about to manifest itself. The disease commences with an intolerable headache, chill, nausea, vomiting, vertigo and great weakness. The pain in the head is intense, apparently affecting the whole head at times or certain portions at others. Vertigo and vomiting occur when an attempt is made to rise. There is apparently no real cause for the vomiting as far as the stomach is concerned. The food is at first vomited, followed by mucus and bilious matter. In a short time the muscles of the neck become stiff, and with every movement of the head pain is experienced. The muscles of the spinal column soon become rigid and stiff so that pain is experienced with the movements of the body. The muscles of both the upper and lower extremities are affected, and the motions of flexion and extension are painful and awkwardly performed. Symptoms of irritation of the sensory nerves are experienced. The surface of the body is generally sensitive, and the skin of the face, neck and temples especially so. The headache is intense and causes great suffering, which is manifested by groaning and restlessness. At the commencement of the disease high mental excitement introduces delirium, while in children convulsions may occur. The delirium may be active, the patient being difficult of restraint; or it may be milder in character. The symptoms of excitation in the mental sphere do not continue long, for in the course of the first day effusions occur, causing depression, and the delirium gives place to stupor. The rigidity of the neck increases and the spinal muscles contracting, the spine is curved and the head is drawn back. The forearms are partly flexed on the arms, and the legs on the thighs. Attacks of cramps and spasms occur, with convulsions in children, but the cramps and spasms occur in groups of muscles—cramps in the muscles of

the legs, chiefly; and spasmodic twitchings in the muscles of the eyelids, lips, etc. A condition of somnolence occurs in milder cases, but is followed by stupor or paroxysms of active delirium. The special senses are disordered. Intolerance of light is followed by double vision, amaurosis, amblyopia; vertigo, tinnitus aurium and intolerance of sounds are succeeded by impaired hearing and sometimes by deafness. The face is pale and sunken and shows a condition of suffering. The appetite is absent, taste lost, and generally vomiting is present. At the commencement of the disease, constipation is present, but later on diarrhœa and involuntary evacuations occur. The tongue is dry and cracked, sordes accumulate about the teeth, and blood exudes from the gums and nares. The circulatory system is little affected by the inflammatory disturbance of the nervous system. The pulse is generally quickened, but seldom exceeds one hundred in the first four or five days. The distinct features are the irregularity of the pulse, the unaccountable quickening, the equally unaccountable slowing, and variations in tension. The respiration is, too, irregular—first quickened, afterwards variable in respect to depth and rhythm. Various kinds of eruptions are present, but sometimes are overlooked in certain epidemics. When from effusions the medulla is compressed, which generally occurs in four or five days, the respiration is sighing and irregular. The most frequent site of the eruptions, herpes, is on the face, but it may occur on other parts, while the other eruptions are distributed over the body irregularly. In six days or less, the case reaches the maximum generally. Stupor is followed by coma in fatal cases. In such cases, which are fatal, depression takes the place of motor and sensory excitation, the contraction and rigidity relax, the extremities become paralyzed, the eyes sunken, pupils dilated, deglutition is performed with difficulty, evacuations involuntary, temperature rises to 105° , 106° or higher in some cases, and the pulse extremely rapid.

In cases that recover the depression is slight; the rigidity of the neck and spine gradually subside, the headache and vomiting disappear slowly. In milder cases the symptoms are slight and with no symptoms of depression or delirium.

The Fulminant Form.—In this form we find the poison in its most active form. From perfect health the patients pass

into a state of collapse in a few hours. At the commencement there is usually a chill, patient becomes cyanosed, the face is livid, skin covered with a clammy sweat, the eyes sink deeply in their orbits, intense pain in the head, consciousness and delirium appear in a short time, the pulse is rapid and feeble, respiration is slow and sighing, purpuric blotches appear on various parts of the body, urine is scanty and loaded with albumen. Such cases prove fatal in a few hours or days.

The Petechial Form.—This form differs from the ordinary in the tendency toward the dissolution of the blood. Bleeding takes place from the gums, nares and under the skin, forming petechiae and vibices. In severe form the symptoms are extreme from the beginning. There are great prostration, extensive purpuric patches, vibices and ecchymoses. In this form of the disease, coma appears early. A fatal result is reached in three or four days. In milder cases the only difference from an ordinary form is the numerous and extensive ecchymoses, vibices and the hemorrhages from the mucus surfaces.

The Abortive Form.—This is a very mild form, occurring in those exposed to the disease but not susceptible further than this to the action of the disease. The symptoms are headache, stiff neck and spine, vomiting with no fever. The disease runs a course in two or three days. Some writers describe an intermittent form which has been referred to in the general symptoms, but other writers consider that form the same as the ordinary.

Pathological Anatomy.—There is an acute leptomeningitis of the brain and spinal cord. The pus and lymph are most abundant on the convexity of the brain, along the larger blood vessels and in the fissures. We find in the spinal cord that the posterior surface is more affected than the anterior, and the lumbar region more than the other parts. The ventricles of the brain contain turbid serum or pus. In the cortex of the brain we find punctiform hemorrhages, accumulations of leucocytes or actual abscesses. Other changes found are congestion of the lungs, liver, spleen and kidneys, fatty degeneration of the renal epithelium, and granular degeneration of the voluntary muscular fibres. Sometimes ecchymosis of the pericardium and pleura, and suppuration of the joints are present.

Diagnosis.—It is not difficult to make a diagnosis in the middle of an epidemic. The characteristic features are the sudden onset, the headache, pain in the back and limbs, stiff neck, and the herpes labialis. One of the greatest diagnostic symptoms which seems to distinguish it from other forms of meningitis—tubercular and suppurative—is the purpuric eruption. This should always be considered. It must be remembered, however, that this eruption sometimes complicates pneumonia, but it must not have too much weight in very young children, as a retracted head and convulsions may occur from pneumonia alone.

With the probability that this disease is due to a micro-organism, a lumbar puncture and analysis of the cerebro-spinal fluid, must not be under-estimated.

For a more thorough explanation the reader is referred to the diagnosis under the headings of Tubercular and Simple Meningitis, in standard text-books.

Prognosis.—In individual cases the prognosis can never be made with certainty. We may say in a general way that in the fulminant cases the patients die, while in the mild and abortive ones they recover; but the exceptions are so numerous that we can be guided in our prognosis only by probabilities. The following conditions are generally to be regarded as of *unfavorable* import: infancy, unusual severity of the symptoms of excitement, and the early appearance of those of depression, return of the vomiting, intense cephalalgia, and loss of consciousness after apparent improvement, continuous coma, convulsions, and irregularity of the respiration. A favorable prognosis may be made in the moderately severe and mild cases. When all the symptoms uniformly decline in the first and second weeks, and convalescence takes place during the third or fourth weeks without the development of important complications or sequelæ.

Treatment.—There is no treatment for this disease, as yet, that may be called curative. While a large percentage of cases with the extreme symptoms prove fatal, the milder cases show a large majority of recoveries.

With all the different treatments, therapeutic and otherwise, that have been tried, the death rate does not seem to be on the decrease. So we may say that there is nothing like an infallible treatment for the disease, today.

Many authorities recommend the free use of opium, especially in the form of morphine, hypodermatically. There are two points in regard to the administration of opium, on which the authorities strongly insist—early and efficient administration. It should anticipate the effusion by an antagonistic action on the vessels. To accomplish this object large doses are necessary to increase the arterial tension and slow the heart; and thus prevent the migration of the white corpuscles. The period when the opium or morphine may be most useful is limited by the effusion. After the first four or five days it is less important, but its utility does not cease until the symptoms of depression come on.

Quinine and ergot have been used largely in this country, sometimes in combination with opium.

Some authorities recommend the use of hot applications to the spine in preference to cold. As regards the free use of opium, the writer cannot agree with the different authorities on account of the dangerous results from the use of this drug in early life. While there may be some virtue in such a treatment in adult life, we know that opium is borne very badly in infancy and early childhood; thus the danger of its free use.

As regards the other treatments, as quinine, ergot, etc., they may be tried, but the writer has more faith in the general and common treatments of tubercular and simple meningitis, than any other treatments.

There is a question, however, regarding the hot applications to the body, which will bear investigation. There has been some success attained in the use of hot baths. The bath should be of the temperature of 26° to 70° R., and hot water added gradually until the temperature reaches 32° R. During this treatment cold is applied to the head. After the bath the patient is wrapped in woolen, with no drying or rubbing. The other treatment should be to keep the head, neck and spine cool; nourishing meat preparations as a diet, with wine, cognac in milk, and beer. It is claimed that the hot baths, even in the presence of fever, does not raise the temperature of the body, but on the contrary, diminishes it. It is also asserted that the hot bath is beneficial as far as the heart and the nervous system are concerned, and relieves the pain.

The successful treatment of this disease in the future, will depend upon whether the condition is caused by a micro-organism, and the discovery of a means to destroy it; or some radical treatment different from those of the present time. The question of surgery should be considered, but the writer could recommend the lumbar puncture only.

Burlington, Vt.

SELECTED ARTICLE.

THE PREVENTION OF DIPHTHERIA.*

DR. L. C. GROSH.

Health Officer, Toledo.

IN considering before you the subject of prevention of diphtheria, I do not expect to bring out any new or original ideas, but simply to suggest some of the salient points for your discussion.

In considering the etiology of diphtheria one cannot but be impressed with the amount and thoroughness of the work done on it prior to and since the discovery of the Klebs-Löffler bacillus. In no other disease has it been so thoroughly demonstrated that the bacteriological cause complies with the four rules of Koch as in diphtheria.

Given the cause of this disease, it would seem a simple matter to find the origin of the causative factor, but all agree that no exact origin is known. It is agreed that it is developed by unsanitary conditions in general and transmitted from one individual to another either directly or indirectly. It therefore follows that the first step to be taken to prevent the spread of the disease is to enforce strict sanitary regulation and correct these unhygienic conditions.

The next question which presents itself is this: With the disease already established how to prevent its transmission, directly or indirectly, from existing cases. The first important factor, not only in the treatment of the disease, but in preventing its

*Read at the meeting of the State and Local Boards of Health of Ohio, in Columbus, January 25 and 26, 1900.

spread, is an early and correct diagnosis. If such diagnosis is not forthcoming, not only will the immediate family and associates of the infected person be exposed, but isolation and quarantine (the importance of which you all appreciate) are necessarily delayed. If the diagnosis be correct, but a report of it is not promptly made, absolutely no steps can be taken by the department of health to prevent the transmission and spread of the disease. From a preventive standpoint, in no other disease is the diagnosis so important.

The introduction of serum therapy in diphtheria has increased the demand for more minute discrimination and conclusion in the diagnosis of this affection. We have in diphtheria antitoxin, an antidote and successful means of preventing the development of the specific bacillus in the throats of those affected.

It has been discovered that other germs than the Klebs-Löffler bacillus are capable of producing pseudo membranes in the throat, larynx and nares, possessing clinical features in many ways simulating true diphtheria. All this adds to the importance and difficulty of accurate diagnosis.

Again, there is a bacillus that in every way resembles the Klebs-Löffler bacillus, but is absolutely incapable of producing the disease. So it is plain that the clinician and bacteriologist are often in doubt, and you must all appreciate how often this doubt will prove disastrous, not only to a community, but also to the records of its board of health.

Although the majority of the medical profession have not at their disposal properly equipped bacteriological laboratories, and must, of necessity, depend largely on bedside diagnosis, the procuring of such laboratories should be encouraged and certainly no health department should be considered complete without one. And although the fact remains that these pseudo diphtheria bacilli do exist, and such cases may possibly be reported as true diphtheria and quarantined, still this would prove true in such a small number of cases, proportionately, that they may be counted as naught.

It is erring on the safe side and the public should always be given the benefit of the doubt.

Everyone will agree that a case once diagnosed as diphtheria

should be reported immediately to the department of health. This statement may appear unnecessary, but strange as it may seem, there are many of the profession who even today do not deem this necessary and wilfully neglect this duty, hoping to save their people from quarantine.

Now, although the success of every health department depends, in a great measure, upon the co-operation of the profession and their influence upon the people, at the same time it remains the duty of the department to enforce compliance with this measure. Such a measure may seem calculated to arouse the direct opposition of some of the members of the profession, but if all, without exception, are treated alike, the department is bound to receive the enthusiastic support of the better and more conscientious members. Reporting cases promptly themselves, they have the right to demand that others do the same.

The diagnosis established, the next step is absolute isolation and quarantine of the case and immunizing exposed cases with proper doses of antitoxin.

The question of quarantine is always a serious one among the classes of people in which diphtheria generally makes its first appearance—the laboring classes. It is serious not only because it is a great inconvenience, but by keeping the wage-earners from their work or forcing them to remain away from the home during the quarantine, incurs an expense which is apt to prove a serious burden to them. Ordinarily this class of people will resist such measures, their mental capacity being such that they cannot understand and appreciate the importance of them.

Unless a quarantine is efficient in every detail the attempt to prevent the transmission of the disease will prove useless.

It has been claimed that absolute isolation and quarantine is impossible in the larger cities, but this, I maintain, is possible. It all depends upon the rules formulated and the efficiency with which they are enforced. That such rules can be enforced I am positive, provided that all classes of society, without exception, are held responsible and provided, too, that all offenders, rich and poor, are promptly and properly prosecuted by law.

The members of a community in which such offense is properly prosecuted will themselves act as guards and informers for a department which they know will enforce these regulations. To

secure such co-operation it is imperative that printed explanations of the reasons and rules of quarantine be left at each quarantined house, and that they be printed in a language that the inmates may read and understand.

How long shall a case of diphtheria be quarantined, and during how many days is the disease capable of being transmitted? These are questions difficult to answer, even in the community where bacteriological examination is possible, as the number of days after the onset of the disease during which virulent bacilli may be found varies from ten to over seventy-two days. In cases where bacteriological examinations can be made, no quarantine should be raised until two negative attempts have been made to develop the Klebs-Löffler bacillus in the case. Where boards of health cannot have such examinations made, the state should fix a stipulated number of days for quarantine, and a set number of days before the recovered case is allowed at large, for, as soon as diphtheria becomes epidemic, and bacteriological examinations are not possible, nearly all cases that develop false membrane will be reported as diphtheria, and the department of health, without proper facilities for discriminating between them, is obliged to accept such reports. For example: A case of diphtheria is reported to the department. In two, three or four days this same case is reported recovered, free from contagion and ready for fumigation.

Now, this may or may not have been a case of true diphtheria. According to our present state regulations a patient is allowed to return to school seven days after fumigation.

In every diphtheria epidemic a large number of non-diphtheritic cases will be reported, and the reports must be accepted. Now, these cases reported as true diphtheria must, of course, be treated as such, and the department to protect itself and the public must treat them all alike. If some stipulated number of days is set for all cases the profession will be more careful in its diagnosis. They will consider the time the people are to be quarantined and there will not be so many men making records for curing cases and opening quarantines in from two to four days. I feel that as a rule cases are reported free from contagion too early, and it has been my experience that, as soon as a house is fumigated and the card removed, isolation is nil.

When we consider that over ninety per cent of all cases of diphtheria occur between the ages of two and nine years, the importance of the public school as a place where transmission is most likely to occur is manifest. That the children exposed to contagion should be excluded from the school and separated from the case itself it is needless to mention; that the Fall term of school marks the beginning of most epidemics and that such epidemics decrease markedly during vacations seem to prove the truth of these statements, although the climatic changes of this time of the year (the Fall) influences the development of all kinds of catarrhal conditions and sore throat, thus predisposing children to diphtheria. At the same time the bringing together of a large number of children aids in a great measure the transmission of the disease.

The subject of medical inspection of schools is now being universally discussed. In Boston, according to Dr. S. H. Durgin's report during the first four months of their medical inspection, 9,063 children were examined, of whom 5,828 were found to be sick, and 3,235 were not sick. The number sick enough to be sent home was 1,033. Of these 283 had contagious diseases, as follows:

Diphtheria, 58; scarlet fever, 19; measles, 42; whooping cough, 17; mumps, 35; pediculosis, 47; scabies, 33; congenital lues, 7; chicken pox, 22.

These children, supposed to be healthy, were in their seats spreading contagious diseases among other children. The number of children saved from these diseases by this timely discovery and isolation of the sick children is, of course, beyond computation. Other diseases discovered necessitating treatment were: abscess, 22; adenoids, 59; catarrh, 244; cellulitis, 12; cholera, 8; colds, with more or less bronchitis, 224; debility, 63; diseases of the eye, 389; diseases of the ear, 35; skin and scalp, 186; throat and mouth, 3,489; epilepsy, 5; fracture of the collar bone, 1; headache, 171; indigestion, 42; malaria, 17; nausea, 50; Potts' disease, 3; swollen glands, 74; wounds, 21; miscellaneous, 411; examined for vaccination, 117.

This illustrates the importance of medical inspection of school children and schools for the prevention of contagious diseases in general, and of diphtheria in particular. For, when an epi-

demic occurs, a large number of mild cases of diphtheria exist for which the parents of the children see no necessity of calling a physician, at least until the disease has advanced far enough to become a source of infection, and by this time an innumerable number of exposures may have occurred in the schools. In this manner the disease is rapidly spread, and our attempts at prevention are seriously delayed.

If the medical inspection of schools was at the present time the rule instead of the exception, health departments would be enabled to take prompt action in cases of this kind. The co-operation of the boards of education with the boards of health is an essential in the prevention of any contagious disease, and unless they act in harmony the efforts of the health boards to prevent the spread of contagion will again be crippled. When such medical inspection is not carried out the board of education should make it the duty of every teacher or person in charge of the pupils to ascertain the cause of every half day's absence. If such absence be caused by sickness, then the nature of the malady and the name of the attending physician, if any, should be reported to the health department. In case there is no physician, an investigation should be made by this department.

When diphtheria has become prevalent in a schoolroom the room should be fumigated after the afternoon session, janitors should be instructed in the technique of disinfection and fumigation. Individual drinking cups and pencils should be furnished the pupils, and under no circumstances should an exchange of these articles be permitted.

That milk is a source and carrier of infection has been admirably pointed out by our secretary, Dr. Probst. Milk itself is an excellent culture medium, and any water borne disease may be carried by milk, since water is the common dilutant of milk. The milk may have been kept in a house where a person was ill and have become infected by the atmosphere. Milk ticks often convey disease, as they are almost always dirty. Milk bottles may be transferred from house to house and carry infection. The only way to control the conveying of disease in milk is by rigid enforcement of the permit system. The inspection of dairies, remodeling of cow stables, purifying water supplies and procuring the hearty co-operation of the dairymen in his own in-

terests. The registering of all milkmen, and persons dealing in milk, especially as most municipalities are furnished with milk from rural districts, is one of the greatest aids in investigating sources of contagion.

In causing contagious disease the water supply of a city is an important factor, as is the milk supply. That impure water is a cause of the origin of diphtheria bacilli I am not prepared to say, but these bacilli have been found in water. An investigation of the water supply of those afflicted with diphtheria in Toledo I have found that over ninety per cent of them procured their drinking water from bad surface wells, six per cent from artesian wells, and only four per cent of those afflicted were supplied with city water.

In Toledo diphtheria has been epidemic for years. During the past year, in the month of January 26 cases were reported; February, 39; March, 42; April, 26; May, 21; June, 18; July, 11; August, 53, and in September, at the opening of school, 147, which increased in October to 177. Then most strict quarantine regulations were enforced, and the department met the co-operation of the school board. November, 104 cases reported; December, 45 cases, and January 20th, 19 cases were reported. Of these nineteen, fourteen have been fumigated, leaving but five active cases at the present time.

The greatest increase of cases, as you will observe, occurred during September at the beginning of school. The disease since that time has decreased, due to the rigid enforcement of quarantine rules, and by not allowing fumigation until at least ten days after the disappearance of the membranes from those afflicted.

And since January first of the present year, in compliance with the new state regulations, children have not been allowed to return to school until seven days after fumigation of the premises.

The board of education has required the teachers to inquire into cases of absence, and the health department has investigated where there was no medical attendance. The department of health in Toledo is far from what it should be, not having at present the funds to procure necessary improvements. We have no bacteriological laboratory, no medical inspection of schools,

no dispensary for antitoxin to immunize exposed persons, but still we have been able in some measure to control the disease simply by strict quarantine enforcement.—*Ohio Sanitary Bulletin*, Vol. 4, No. 1.

REVIEW OF PEDIATRY.

TREATMENT OF INFANTS IN THE PROVIDENCE LYING-IN HOSPITAL.

AS REPORTED BY DR. H. G. PARTRIDGE.

"a. Feeding. The mainstay in feeding has been, of course, modified milk pasteurized, but to this certain of the cereals have been added from time to time. Lactated Food, Peptogenic Milk Powder (Fairchild's), Eskay's Albumenized Food, Peptonized Milk and Malted Milk have all been used in individual cases, usually for short periods.

The cream used is centrifugal cream, separated at the Hospital immediately on the arrival of the milk in the morning. This has been found on analysis at the State Agricultural College to be twelve per cent. fat. For convenience in adding milk sugar there is made up a twenty per cent solution, and the formulae are made up with this element expressed in fluid ounces. The alkalinity is insured by adding five grains soda bicarbonate to each gallon of milk before the cream is separated.

Each child had made for it a special mixture, and this was changed as often as it seemed necessary. The total amount to be given in the twenty-four hours was mixed, placed in bottles corresponding in number to the number of feedings, pasteurized and placed on ice until needed.

During August and September, when there were a number of cases of gastro-intestinal disturbance, various cereals were added to the milk mixtures; among these were Imperial Granum, barley water, Mellin's Food and arrow root gruel. These seemed to serve well in many cases with which the plain modified milk had not seemed to agree.

In the cases of marasmus the formulae were changed over and

over, but with no result in many cases. In one case, after the milk had been modified in various ways without success, Peptonized Milk was given, and the child ceased vomiting, the stools became normal, and the weight at once began to increase. This was not a typical case of marasmus, but rather of gastro-enteritis.

In conclusion, there are a few remarks to be made upon the treatment of special conditions.

The chief therapeutic measure in the treatment of the enteric disorders, especially those cases in which the colon was involved, was irrigation of the bowel. Normal salt solution was used in most cases, and was introduced through a soft rubber catheter, which was inserted from five to nine inches, depending on the size of the child. This was done once, twice or three times a day, as the case seemed to demand. In many cases the relief was speedy, the mucus in the stools diminishing in amount.

Of drugs used for these diseases, salol and bismuth subnitrate were principally used, the former in half-grain doses and the latter in ten and fifteen grain doses. Two cases were given Pasteurine in fifteen minim doses; these patients recovered quickly. They were sick however in November, when the weather was cool, and very possibly the disease would not have been severe in any case. Pasteurine was selected from the many similar preparations because it is claimed to contain formalin. It would seem, however, from the experience obtained in the Hospital, that proper feeding, with bowel irrigation, will have as much or more effect for good than any medication.

For vomiting, a mixture of bismuth and carbolic acid was given to one or two cases, but in the majority the stomach was washed out. This proved to be a most valuable measure.

Syrup hydriodic acid was given to several of the cases of bronchitis, and cleared them up in a short time. For the pneumonia cases the treatment was symptomatic and supporting.

The marasmic children were given various drugs in the hope, in most cases a vain hope, of in some way improving assimilation. Among these drugs were iron, nitrohydrochloric acid, Panopepton, Hemaepptos, cod liver oil and the hypophosphites. We could see no effect from these drugs, and in particular in regard to iron, it may, I think, be said that iron has far less effect on children than on adults. In no case was any marked result seen from its administration.

In two cases nitrohydrochloric acid in drop and two-drop doses seemed to do good. At all events improvement began very soon after it was given. Cod liver oil has been disappointing, for although given in different ways, still the children did not gain under it. For the boils occurring on the scalp, Protonuclein was given faithfully, but I have failed to see any definite results. The results of drug administration show pretty conclusively, I think, that much more can be accomplished by care in hygiene and feeding than by drugs. Sunshine and fresh air are better than iron and cod liver oil."—*Providence Medical Journal*, Vol. I., No. 2.

BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

In a review of the work done by the laboratory of the State Board of Health of Minnesota, Dr. T. F. Westbrook says: "Perhaps no such opportunities for the study of the problem which the variability in morphology of bacillus diphtheriae presents, have occurred as in the work in this state. Early in the investigations undertaken by the State Board of Health at the State Public School at Owatonna, the finding of a variety of bacillus diphtheriae which until then had been overlooked or described as the pseudo-diphtheria bacillus, led to closer investigation of this question and particularly during the last year when the routine work has permitted of it, all available time has been devoted to laboratory study.

A portion of the results was presented to the American Public Health Association in October, 1899, and will shortly appear in the journal of the association. The material presented has included:

(1). The tabulation of the forms of bacilli found in the course of over 5000 examinations of the noses and throats of 263 children in the State Public Schools at Owatonna during their complete individual isolation. (This work was done more than a year ago by Dr. O. McDaniel).

(2). The various forms of bacillus diphtheriae met with in and isolated in purity from:

(a). Ordinary routine examinations of clinical cases.

(b). Earlier clinical cases at the State Public School, Owatonna.

(c). The throats or noses of healthy children at the State Public School at Owatonna, the School for the Feeble Minded at Faribault and certain other town public schools throughout the state.

Each form met with has been accurately sketched to scale in colors and has received temporarily a letter to distinguish it and render tabulation and record easy. The difficulties of description and varying ideas of types of bacilli met with in this work have necessitated the adoption of some such temporary and purely arbitrary nomenclature. Since its adoption the types of bacilli met with in all examinations have been recorded by this means and it is hoped that the value of any data so obtained may be enhanced by the adoption of this or some other similar method by other laboratories so that a general comparison of results may be possible. Such a study of routine clinical cases and continued investigation of the throats and noses of healthy school children, both in districts which at the time are or recently have been infected and also those which are and have been free of diphtheria should undoubtedly soon lead to some definite knowledge as to the dividing line between diphtheria and diphtheria like bacilli. Cultural, staining, pathogenic and other characteristics have been and are being studied in connection with morphology. In the meantime certain of these forms are beyond question and as it is these which are most often met with in the throats of clinical cases of diphtheria there is no difficulty in making diagnoses.

The initial mixture of these "typical" forms with "atypical" forms of the bacilli or the occasional occurrence of the "atypical" in nearly pure culture later in clinical cases, offer no difficulties to diagnosis. Where specimens are forwarded for the first examination they are always or with few exceptions from clinical cases. Where the "atypical" forms are met with even though no "typical" forms may be present on the first examination they are usually discoverable during the later stages of the disease, so that a first report of the presence of "suspicious bacilli" is often followed by a positive diagnosis. Where suspicious (atypical) bacilli alone are found on the first examination and later examination fails to show the "typical" forms a negative report is given. This may be said to happen but rarely.

The occurrence of bacillus diphtheriae in the throats and noses of the apparently healthy.—This possibility has been known for

years, but a better opportunity for its study than that afforded at Owatonna could not well be imagined. In the tables presented before the American Public Health Association, of the 263 children placed in complete individual isolation, 59 had at some time during the investigation diphtheria bacilli in their throats and 70 had them in the nose. It must be remembered that these numbers indicate only those children in whom the bacilli were of such a type as to admit of no doubt as to their nature on the part of the most conservative bacteriologist. The "atypical" forms under study are included in another group altogether and for the purpose of this paper and in questions relative to quarantine are here eliminated. This is only right until something more definite in regard to the dividing line can be established. No such condition as that met with at Owatonna has been encountered in any other place in this state. This may be largely owing to the fact that no such thorough investigation has been made elsewhere in the state. It is worth of interest that within a few days a letter has been received from Dr. C. V. Chapin, Superintendent of Health of Providence, R. I., who states that he has there discovered two institutions where the conditions are similar. The inmates of one of the institutions are infected with "typical" and of the other with "atypical" forms of bacillus diphtheriae whilst the general health is good in both. The inability to rid the inmates of these bacilli led Dr. Chapin to enquire whether there had been any recent occurrence of clinical diphtheria at Owatonna as he knew that it had been impossible to rid that school of the bacilli. It is fortunate that such conditions seem to be rare, and it may perhaps be stated as a general proposition that those "typical" forms of diphtheria bacillus (found ordinarily in cases of clinical diphtheria) when encountered in seemingly healthy throats are found in other members of a family in which diphtheria has occurred or at least usually in those who may have come in contact with diphtheria cases.

It is to the elucidation of such points as these that the work of the State Board Laboratory is at present directed and so perhaps no such definite statement as the above can yet be made."—*St. Paul Medical Journal*. Vol II. No. 4.

TREATMENT OF MEASLES.

Dr. Marcus P. Hatfield of Chicago, says: "As measles is a self-limited disease our chief duty is to keep our patients warm in bed and keep on watch for threatened complications. There is a great dread of cool drinks during the feverish stage, so that the child is usually kept upon hot saffron tea or other teas, but personally I have never seen any ill effects from allowing them to drink freely of cool—not iced—lemonade or flaxseed tea with lemon *ad lib.* A temperature of 103 to 104 degrees, with accompanying headache, can be greatly alleviated by two to three grain doses of phenacetin or lactophenin. For the annoying cough, I prefer a modified Wood's cough mixture:

R.—Liq. pot. citratis.....	30.
Syrupi ipecac.....	5.
Tinct. opii camph.....	10.
Succi limon.....	15.
Syr. toltutan.....	60.

M. Sig: Teaspoonful every two hours.—H.

If the bowels are constipated, or there is much headache, dilute hydrobromic acid may be substituted for the paregoric in the above mixture and if necessary minute doses of codeine may be alternated with the cough mixture to relieve the harassing cough. Cod liver oil with syrup of iodide of iron should be used wherever enlarged bronchial glands are suspected, and persisted in until the tendency to recurrent colds is overcome.

Prophylaxis is usually inefficient, as probably the prodromal stage of measles is the most contagious. Others think the urine is the usual carrier of contagion. Quarantine for the sake of the child is not usually long enough, and it should be remembered that exposure to cold during convalescence is the usual cause of unfortunate sequelæ.—*The Medical Standard. Vol. XXIII. No. 4.*

TUBERCULOUS MILK.

Dr. Charles Heitzman of New Orleans, says: "Tuberculosis is not hereditary. I have made *over one hundred thousand* post mortem examinations of calves up to their year old form and have never seen *one case* of the disease among this number. It

must be acquired and from without. Numerous cases are on record where tuberculosis has been transmitted to the offspring of perfectly healthy parents through the medium of milk from tuberculous cows and *it is not necessary that these cows should have diseased udders to convey the infection.* There are times if not all the time, that the blood of the individual affected with tuberculosis is teeming with the specific poison. The cow has rightly been named 'the wet nurse of consumption.' Scrofulous females in the human race usually secrete an abundance of milk because there is an unusual tendency to glandular enlargement and activity. As the mammary is the perfect type of a glandular structure it is stimulated to increased action. A scrofulous cow is usually the largest milker and looked upon by the laity as healthy because of the large milk supply. Does not a tuberculous milk supply account for the large amount of intestinal disorders in children, especially in our large cities?"—*New Orleans Medical and Surgical Journal.* Vol. LII. No. 10.

FEEDING INFANTS.

Dr. E. E. Graham makes the following report and suggestions: "The child I now present is ten months old, born natural, and fed at the breast until four weeks ago. Children should be weaned at one year of age, unless this time comes in very warm weather, when it may be lengthened somewhat. It is better to begin at about the eleventh month as a rule.

Since being weaned this child has lost flesh and has suffered from bowel trouble, at times having seven or eight movements daily. They are now three or four and black in color. Vomiting has also been a symptom. The child has been fed on crackers, bread and butter, vegetables, etc., with some milk.

We have here a good illustration of how not to feed a baby. Thousands of such children die yearly, as this one would soon do under the present conditions.

In treating this child I would leave off milk entirely for four or five days, and pay attention to getting the alimentary tract thoroughly cleaned. Calomel should be given in the dose of one-tenth grain every two hours until six doses have been taken. Every two hours the child should be fed a weak mutton broth or

properly prepared beef tea, four ounces at a feeding. Between the times of feeding an abundance of sterile water should be given. After three or four days milk may be given. The amount of fat and proteids should be one-half the normal amount at first.

The sugar need not be decreased in this proportion or at all. Beginning with this reduced amount, the milk may gradually be brought up to its full strength.

The large bowel should be irrigated daily for a time with normal salt solution. The child should be in a horizontal position on a prepared couch, or in its bath tub. A number twelve male catheter, flexible, and a fountain syringe held two or three feet above the child, are to be used. In this way, if care is taken, a pint or more of fluid can be introduced before it is expelled. A gallon of the solution may be used at each time. The main seat of inflammation in these cases is at the ileo-cecal valve. Internally subnitrate of bismuth may be given if the looseness continues."—*New Orleans Medical and Surgical Journal*, Vol. LII., No. 10.

CARBONIC ACID GAS IN THE TREATMENT OF WHOOPIING COUGH.

Dr. N. R. Norton reports two series of cases of whooping-cough occurring in two different years, treated by rectal injections of carbonic-acid gas. "Out of 150 patients, 143 were benefited to a very noticeable extent. The 7 cases that were not benefited were of weakling children in advanced stages of the disease. The carbonic acid was obtained from a mixture of bicarbonate of soda and crystals of tartaric acid. By this method the gas is given off sufficiently slowly, so that its administration may be kept up continuously for the necessary length of time. In infants the injections were given for five minutes at a time; in older children for ten minutes. The administration of the carbonic-acid gas is followed by flushing of the skin, especially of the face. In a few of the patients mild diarrhœa developed. It ceased after a day or two, when the injections were discontinued, and they could usually be resumed a day or two later without necessarily causing the diarrhœa.

The success of the injections of carbonic-acid gas was marked

only when the nascent gas was employed; that is to say, when the gas was obtained fresh from the chemical reaction of the bicarbonate of soda and the tartaric acid. In a series of 20 cases, in which commercial carbonic-acid gas was used, it seemed to have absolutely no effect on the whooping-cough."—*Medical News, March 3, 1900.*

EMBRYONIC UMBILICAL HERNIA.

Dr. T. H. Manley, of New York, reports the following case:

"On the evening of October 12th, Dr. L. Zwisohn, of this city, invited me to examine and operate on a newly born female infant with a massive umbilical hernia, which presented features of strangulation and impending gangrene of sac. The offspring was an eight-month child, the first born; the mother had rather poor health during pregnancy, though her labor was natural. The infant was rather thin, but energetic, and had an immense ventral hernia through the navel opening. Soon after birth the infant showed signs of suffering, and the thin envelope covering the protrusion presented a mottled color, with signs of impending gangrene. When Dr. Zwisohn was called in consultation he advised as a forlorn hope, the chances of a kelotomy to relieve the constriction and possibly return the extended viscera. On examination I found that we had to deal with a genuine case of embryonic hernia, the mesoblastic structures of the abdomen lying quite entirely outside, the lateral muscular plates having never closed in. The mass was of globular outline with a narrow pedicle at the navel aperture, then spreading out into a large thin-walled sac with the umbilical cord extending beyond it. The envelope was of dark purple hue, presenting patches of necrotic changes. The infant was etherized, and a free incision made through the abdominal end. Now, it was evident that there was no abdominal cavity, as nothing but a diverticulum remained, which would barely admit the tip of the index finger. Within the sac were the stomach, liver, spleen and pancreas, with the small and large intestine. Nothing could be done in the way of relief, and hence the incision was closed by suture. Six hours later the infant succumbed. An autopsy was refused. The type of hernia above recorded is very rare when of such proportions, for there we had quite an entire eventration, all the viscera

being closed by Rathke's membrane. This deformity constituted practically a congenital monstrosity. The coverings of these herniæ are always thin, nearly transparent, avascular and very brittle. Berger, in his recent brochure, records thirty-two of these cases of the minor variety which were treated by the radical operation. Twenty-six recovered and six died. In one case recorded by Landerek, a part of the stomach was engaged in the hernia. Benedik, in another, discovered the spleen. Both Goodloe and von Hofsten recommend early operation, while Thudicum records twenty-six deaths after the early operation."—*Kansas City Medical Index-Lancet*, No. 243.

BOOK REVIEWS.

"The Electro-Therapeutic Guide." By William F. Howe, M.D., Ph.D., M.E., President of the National College of Electro-Therapeutics; Associate Editor of The Electro-Therapeutist; Member The National Society of Electro-Theraputists, etc. Published by the National College of Electro-Therapeutics, Lima, Ohio. Price, \$1.00.

This is a small work, intended as a guide or aid to the correct use of electricity in the hands of the general practitioner. It has been arranged in this form so that a busy physician may see at a glance the methods of application in any desired case.

The nature, effects and application of faradic, galvanic and static electricity are clearly explained. The treatment of different diseases by electricity is well presented; which form of electricity to use, which pole and how to apply are concisely given.

"Christian Science." By William A. Purrington. Published by E. B. Treat & Company, 241 West 23d Street, New York City. 1900. Price, \$1.00.

We owe an apology for the delay in the appearance of the review of this little book which reached our desk several months ago. We were at once much interested in it. Our professional experience has been such that we sympathize with the author in his plea for children and other helpless sick.

Much of the material has before appeared in the *North Amer-*

ican Review, the *Medical Record* and the *New York Sun*. As might be expected from the author, who is lecturer on "Law in Relation to the Practice of Medicine," the point of view is the legal one. The quotations from "Science and Health" are abundant and convincing (?) For instance: "The daily ablutions of an infant are no more natural and necessary than it would be to take a fish out of water once a day and cover it with dirt, in order to make it thrive thereafter in its native element." Bah!

The inefficiency of the laws against such practices as Mrs. Eddy teaches, the numerous quarrels between her and Dr. Quimby, the criminal recklessness of her followers, and the many difficulties in the way of legally dealing with the system are all well presented by the author. We are pleased to note the large circulation it has already attained and commend it to our readers.

"The Urine and Clinical Chemistry of the Gastric Contents, the Common Poisons and Milk." By J. M. Holland, M.D. Forty-one illustrations. 6th Edition; revised and enlarged. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1900. Price, \$1.00.

It is not many years since clinical chemistry was recognized as a distinct department requiring separate study, books and instructors. But nowadays the ability to skilfully and accurately analyze, not merely urine, but various other substances, is more and more demanded. In or near a city such specimens *can* be sent to a laboratory. But at a distance this is impossible. Hence not alone to the student is this little book valuable but to the general practitioner. There he may learn just what reagents he must have and what strength they must be. Every other page is blank for notes. Rough tests and fine tests are all described. Instruments and sediments are shown in excellent illustrations. Moreover you can tuck the book in your pocket if you wish, and refresh your memory at many an odd moment.

"Transactions of the College of Physicians of Philadelphia." 3d Series; Vol. 21. Philadelphia, 1899.

The papers read at the meetings of this society are always good. This year they add most perhaps to the subject of Typhoid Fever. It has been carefully studied, especially as seen in the soldiers in the hospitals. The blood examination was made a special object of study. Two cases of operation for

perforation are also reported. The pathogenesis of appendicitis and a report of 460 operations in this condition also form two interesting papers.

"Obstipation." By Thomas Charles Martin, Ph.D., M.D. 1899.

This monograph on the disorders and diseases of the Rectal Valve is a reprint from the Philadelphia Monthly Medical Journal, and is issued as such.

There are an abundance of illustrations of both tables, instruments and pathological specimens as well as well written descriptions of the author's treatment for a condition not generally recognized. The author firmly believes that there is such a thing as a rectal valve and so long as we do encounter so many cases of obstipations which do not yield to the ordinary methods of treatment, we may properly investigate his ideas. Few of us, however, will be able to give them anything more than a theoretical approval.

"The Students' Medical Dictionary." By George M. Gould, A.M., M.D. 10th Edition, re-written and enlarged. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. Price, \$3.25.

Ten or twelve years ago we placed on our book shelves a copy of "A New Medical Dictionary" by this same author. No book which we possess has been of more use or given better satisfaction. In these few years the book has gone through edition after edition until it now appears as above. It is larger now—it must be—but it is still convenient in size. There are the same elaborate tables, the same concise accurate style of definition, the same completeness which are often found surpassing much larger works. If you want a medical dictionary, buy this one.

"The Medical Diseases of Childhood." By Nathan Oppenheim, A.B., M.D., with 101 original illustrations in half-tone and 19 charts. Published by The Macmillan Company, 66 Fifth Avenue, New York City, 1900. Price, \$5.00.

The success of his other book "The Development of the Child," which we regret not to have been able to carefully examine, has led the author to try his fortune in a line of writing already well filled by the ten or twelve books issued in the last year or two.

Where can he find a place for a new book? Evidently only by

establishing a new point of view. Such a point he finds in the consideration of lesions of disease and the lessons as to cause and treatment which may be drawn from them.

The illustrations mentioned in the title are *all* photomicrographs of pathological sections. There are no pictures of patients, instruments and surface changes such as we are accustomed to in such books. We confess we hardly knew at first whether to commend such a radical change or not. Author and publishers are at least strong in their convictions and the sections are reproduced in a most beautiful way. Often as we have sat and studied over a given case, having found its parallel in the descriptions of a book, have we puzzled to know just what certain terms mean and why certain results follow. It may be that in this method we shall follow the author in a satisfactory solution.

Certainly we can not fail to gain a clearer idea of the real difference between healthy and unhealthy tissue,—a good basis for sensible and successful treatment. We do not mean to state that the author has adopted a method entirely new, but only that he has made this method more prominent than other authors.

Nor do we wish to make it appear that other sides, especially treatment, are neglected. On the contrary, some practical suggestions, full in detail, if not numerous, are made on each disease. Statistics and authorities are omitted. When therefore you accept the statement of the author you do it because it appeals to your judgment and not because of any name or series of names which accompanies it. On the whole we believe the book will appeal to the average man and will attain the success which it merits.

“Progressive Medicine.” Vol. I. 1900. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 404 pages, 36 engravings and a colored plate. Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, \$10.00 per year.

The plan for this quarterly record of “progress in medicine” which was elaborated by editor and publishers last year has not been essentially changed in this the first volume for 1900. As before the articles are not quoted in full, but the facts, modified and weighed by the competent author in charge of each department.

These are such men as Da Costa, Packard and Blackader. And among the many additions which they have made we may without invidious comparisons call attention to Dr. Da Costa's discussion of the diseases of the Mammary Gland and Dr. Packard's investigation of Serum-therapy in Diphtheria, and of the use of the Brand method in the treatment of Typhoid Fever.

Of special interest to our readers will be Dr. Blackader's presentation of Diseases of Children. From French, German, English, Japanese, and American journals he has culled fifty pages of valuable material. Like the other authors he seems to have succeeded admirably in selecting that which is most useful and permanent while leaving aside that which is merely interesting but of doubtful practical value.

"Diseases of Women." By E. C. Dudley, A.M., M.D. Second edition, revised and enlarged, with 453 illustrations of which 47 are in colors and 8 full-page plates in colors and monochrome. Published by Lea Brothers & Co., Philadelphia and New York.

This treatise on the principles and practice of Gynecology, written by one of Chicago's most eminent and successful specialists, although it is scarcely a year and a half since the first edition appeared, now comes with a new edition. We are not surprised at its success. The skillful grouping of diseases and symptoms, the clear description of operations aided by an abundance of excellent illustrations, the sensible advice, are all elements in its constitution which assure success. One of the features of the book which is evident on the most rapid examination is the number of parallel column, differential diagnoses. The busy physician always appreciates these. In a new division, Part VI., are grouped the functional disorders of menstruation and sterility. Other chapters which contain much new material are those on Cystitis and Diagnosis. Indeed, this last subject, as already indicated, is never neglected, a fact which makes the book of special value to the student and general practitioner.

"Transactions of the American Pediatric Society." Eleventh Session, held at Deer Park, June 27, 28 and 29, 1899, with the Constitution. Edited by Floyd M. Crandall, M.D. Vol. XI., 1899.

This volume contains the usual number of excellent papers, by the most prominent pediatricists of the country.

There are unusual diseases and cases such as Transposition of the Viscera, Sarcoma of the Cerebellum, Porencephalus, and

Ostronylitis. And there are, too, the views of experts on such common diseases as Congenital Heart Disease, Incontinence, and Scurvy, and papers on such subjects as Decrease of Weight in Infants fed Artificially, Clinical Diagnosis Chart and Record, and the use of Gruels as Diluents of Cow's Milk. A mere outline like this shows the sort of work this Society and its members are doing, and lends authority to its conclusions. The volume is uniform in size and binding with those previously issued.

"The Refraction of the Eye, including a complete Treatise on Ophthalmometry." By A. Edward Davis, A.M., M.D., with 119 engravings, 97 of which are original. Published by The Macmillan Company, 66 Fifth Avenue, New York City, 1900. Price, \$3.00 net.

In these days of specialism there have sprung up a host of men who style themselves opticians and claim to be able to fit glasses as well as the best trained oculist. As general practitioners we often meet cases which have been made worse by them and it is to be hoped that we do not refer our patients to such men without knowing something of their ability and training. With an ophthalmometer and a copy of this book, however, no one with ordinary education need fail in such work.

If you are interested in such scientific work, and there is no one near you to divide the profits and double the expenses, you will find this book very helpful. It is written by a Professor in the New York Post-Graduate Medical School, and is full of clinical cases, pictures and diagrams. Hence it closely approximates a course in such a school, such as many of us would like to take, but cannot. Being thus so eminently practical and being the only book in this line in English, we prophesy for it a large circulation and wide success.

"The Year Book of the Nose, Throat and Ear." Edited by G. P. Head, M.D. and Albert H. Andrews, M.D. Published by the Chicago Medical Book Co., 35-37 Randolph Street, Chicago, 1900. Price, \$1.50 net.

This volume is the beginning of a new series of books. We have had our reviews of medical progress in monthly and in weekly journals, our quarterly reviews, and the various excellent year books of medicine and surgery put forth by different publishers.

These editors have chosen a field, not the largest, nor the one

most prolific of scientific articles, and have herein grouped together the most important contributions of the year.

One hundred and seventy periodicals have been consulted and are referred to in the text by numbers.

Dr. Head comments on his portion rather more fully than Dr. Andrews, the latter in most cases introducing the subjects in the fewest possible words. Dr. Head on the other hand does not hesitate to controvert any citations with which he does not agree. We believe such books are likely to become more common and we congratulate the publishers on their success in this first product in a new line.

“A Prescription Book of Infant Dietetics for the Home Modification of Milk.” By A. B. Spach, A.M., M.D. Published by the Chicago Medical Book Co., 35 Randolph Street, Chicago, Ill., 1899. Price, 50 cents net.

This is a convenient little book with detachable leaves. On each leaf, besides the common ingredients for infant food mixtures with blanks for the amounts, there are also a number of valuable suggestions as to the method of preparation, care of bottles, nipples, etc.

On the back of the leaf are directions for making barley water, whey, albumin water, broth and beef juice. On the inside of the cover are suggestions as to the proper percentages for different ages, which agree closely with Holt's, and the quantities needed to produce them.

These are just the things you will see to save the physician's time and secure successful artificial feeding.

“Bicyclic Obstetrical Calender.” A novel and handy ready-reference for physicians, handsomely printed in two colors on card convenient for vest pocket. Sent free on request, by the publishers, Norwich Pharmacal Co., Norwich, N. Y.

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ORIGINAL COMMUNICATIONS

THE SURGICAL TREATMENT OF PRIMARY RENAL TUBERCULOSIS, WITH A CONSIDERATION OF THE RESULTS OBTAINED BY OPERATION.

OTTO G. RAMSAY, M.D.

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The surgical treatment of primary renal tuberculosis has now been practised for at least twenty years, and it seems time that the results which have followed this form of treatment should be collected and tabulated. This has already been done several times with comparatively small numbers of cases, but the greater the number of cases which are studied the more accurate should be the results obtained. For this reason I have attempted, by collecting the majority of the reported cases of operation to the present time, to tabulate, and to obtain from them reliable figures as to the immediate results following the various forms of operation advised, and, as far as possible, to obtain also the remote results which have followed the same operations.

A study of the surgical treatment of this disease, to be complete, should comprise in the first place a numeration of the various operations which have been advised, with the proper indications calling for their performance. Besides this, both the immediate and the remote results after such operations are to be studied, that some idea of the prognosis may be obtained.

My statistics have been obtained from the cases collected by Facklam (Arch. fur. Klin. Chir. Bd. 45, p. 715), those col-

lected by L. Bolton Bangs (Annals of Surgery, Jan., 1898), and a number which have since appeared in the literature, as well as some unpublished cases which I owe to the courtesy of Dr. Willy Meyer, Dr. C. P. Noble, Dr. W. W. Keen, Dr. R. F. Weir, Dr. C. B. Penrose, Dr. Geo. Tuttle, Dr. Baldy, Dr. C. Fenger, Dr. H. A. Kelly, and Dr. W. S. Halsted.

In considering the operations advised in the treatment of renal tuberculosis we may divide them into those which have merely a palliative effect in view, and those which are performed with the hope of effecting a final cure. In the first division, we can class only nephrotomy, or incision and drainage of the renal abscess, as this is the only operation which is frankly done with the idea of palliation alone. In the second division are placed nephrotomy, as this is sometimes also classed as a curative operation; resection of the diseased portion of the kidney, and finally nephrectomy, or complete removal of the kidney. To this last must also be added nephro-ureterectomy, which means a removal of the diseased ureter with the kidney.

Nephrotomy as a palliative form of treatment is of the greatest possible value, as in the first place it relieves temporarily the serious symptoms which have been threatening life, and in the second place it does not preclude a more radical operation later, if the patient be in a condition to stand it.

The class of cases in which nephrotomy is indicated, may be placed in several divisions. In the first place it is the emergency operation *par excellence*, as we can obtain by it marked temporary relief from the most serious symptoms. In this group are placed the patients who exhibit marked constitutional changes, as for instance, sharp daily variations of temperature, rapid feeble pulse, emaciation and loss of strength, great pain, and a purulent collection in one or the other kidneys, and in whom the radical measure of nephrectomy is directly contraindicated by the lowered general condition.

Another group comprises the cases in whom besides the renal focus there are foci of tubercular disease in other portions of the body, or in whom there is other fatal disease of one or more of the important organs.

An exception to this rule is tuberculosis of the bladder, for it is quite a common experience to see a secondary vesical tuberculosis clear up entirely after the removal of the affected kidney.

As another possible exception also may be classed the patients who have besides the renal lesion a small focus of tubercular disease in one lung, but who are otherwise favorable subjects for operation, as occasionally such patients after removal of the kidney will apparently remain well if under the proper climatic and hygienic conditions.

There are also besides these two main classes some cases which are on the border line in the decision as to whether nephrotomy or the radical operation should be done. In these, when it is uncertain whether they have strength enough to stand the radical treatment, nephrotomy would seem the most conservative and safest method, planning later a nephrectomy when the patient has recovered sufficiently to stand it.

My statistics which will follow later show a worse result after nephrotomy with secondary nephrectomy, than after the primary nephrectomy, but this result is open to question as it is certainly true that the patients in whom the nephrotomy was done, were in a much weakened condition or the primary nephrectomy would have been attempted.

For this reason it is not fair to compare directly the two methods of treatment, and theoretically the only added dangers in nephrotomy with secondary nephrectomy and not in the primary nephrectomy are those from a second anæsthetization, with its irritative effect on the remaining kidney, the somewhat longer time given in the first mentioned form of treatment for the extension of the disease, and possibly a somewhat more adherent kidney to be removed.

The next form of operation to be taken up is the resection of the diseased portion of the kidney. At the first glance this operation would appear a most satisfactory form of treatment, and most conservative in its effects, but on studying more carefully the conditions which have to be met in renal tuberculosis, it will be easily seen that we cannot hope always to obtain good results after this operation. The peculiar insidious growth of the tubercles, their microscopical size in the first stages, and the fact that small abscesses may be located singly in the depths of the renal tissue, covered by apparently normal structures show the dangers to which the surgeon is exposed in attempting to remove all of the diseased tissue.

I am sure, too, that it has been the experience of most surgeons to see kidneys which on superficial view appear healthy, save in one portion, but which on microscopical examination show discrete miliary tubercles scattered through the apparently normal tissues, or which in multiple sections through the kidney reveal small tubercular abscesses deeply seated in the normal appearing part of the organ. For this reason resection has been condemned by most surgeons, and though a few cases have been treated in this way, and though in some forms of renal inflammation it is a most valuable operation, in renal tuberculosis we can find no case which would seem to indicate its performance. Therefore, though resection of the kidney is classed among the operations advised, I feel perfectly justified in speaking of it as a highly dangerous procedure, and never by any possibility indicated in renal tuberculosis.

Nephrectomy, or complete removal of the kidney, is the next form of treatment, and from the good results which have followed it, a most valuable operation in primary renal tuberculosis. The indications for its performance are easily stated.

The cases which come in this class being the ones in whom there is no discoverable tubercular focus in other portions of the body, or in whom there is no other fatal disease of the important organs. As exceptions to this rule, tuberculosis of the bladder must be again noted, and in proper cases a small tubercular focus in the lung may not be considered a contra-indication.

The question as to what should be done with the diseased ureter was first answered by a French surgeon, Reynier (*La Semaine Medicale*, Feb. 24th, 1893, Vol. I., No. 8), who removed a tuberculous ureter some months after the removal of a tuberculous kidney. Following this the operation of nephro-ureterectomy was evolved, being first described by H. A. Kelly (*The Johns Hopkins Bulletin*, Feb. Mar. 1896), who reported three successful cases at that time. Since then many like operations have been done both in this country and abroad, with almost uniformly good results, so that at the present time it is the accepted operation for the cure of renal tuberculosis.

As a further advance following this, a resection of the diseased portion of the bladder at the same operation will probably follow later, though as yet no such case has been reported.

The question as to what becomes of the ureter if it is not removed is quite an interesting one, and though not as yet definitely settled, later results in some cases have been reported. A. B. Johnson (*Annals of Surgery*, 1899, Vol. 29, p. 754), describes the later ureteral condition in a case in which the kidney had been removed sometime previously, for renal tuberculosis. At the first operation the ureter was found much thickened, and a persistent fistula remained after the kidney was removed. At the later operation the ureter had almost completely disappeared, being represented by a thick fibrous cord, containing at intervals three or four beads about the size of buck shot, which contained a material resembling axle grease.

F. Tildon Brown (*Annals of Surgery*, 1899, Vol. 29, p. 755) spoke of having seen a similar case in which he removed a tubercular kidney, leaving the ureter behind. The patient died some months later, and at autopsy the ureter was found to have diminished nearly on-fourth in size, although tubercle bacilli were still present. From these cases and from several others which have appeared at varying times in the literature, Brown considers that non-functionating tissue such as the ureter must be after the kidney is removed, resists more strongly the growth of the tubercle bacilli, and that final disappearance of the tubercular disease would probably result in some cases.

This favorable result does not, however, always follow, as is illustrated by several cases reported by Dr. McCosh (*Annals of Surgery*, 1899, Vol. 29, p. 757). One of these was operated upon three years before, a tubercular kidney being removed at that time. Two years later an abscess developed near the site of the ureter, which was opened and scraped, healing temporarily; later, a second abscess appeared lower down, and Dr. McCosh expected to have to remove later the diseased ureter. In another case he removed one year later a tubercular ureter as thick as a man's thumb, filled with tuberculous granulating material; and in still another case a persistent fistula remained through which methylene blue could be injected into the bladder. Dr. H. A. Kelly has also had a similar case in which a tuberculous ureter left after removal of the kidney required several later operations, so that we cannot always depend upon the

non-functionating ureter taking care of itself, and these last cases prove that when possible ureterectomy in addition to nephrectomy is necessary.

TABULATED RESULTS AFTER OPERATION.

I have collected 304 cases of renal tuberculosis in which some form of operative treatment was followed, the operations comprising nephrotomy alone, nephrotomy followed by nephrectomy, resection of the diseased portion of the kidney, primary nephrectomy, and nephro-ureterectomy, or, in fact, every form of surgical treatment advised for renal tuberculosis.

I wish to state before going into these statistics that I have considered death occurring within one month after operation as being the immediate result; those occurring at a later period are classed as the remote result, and for this reason it will be seen in all the classes that the deaths are placed in two divisions, those occurring within a month and those at a later period.

Results after nephrotomy not followed by other operations. This operation was done in 55 cases, and among these 15 died within the first month after the operation; 22 died at a later period, varying between $2\frac{1}{2}$ months and 3 years; 8 were noted as improved, and 10 were supposed to have recovered. Among the 15 cases dying within one month the cause of death in 6 was uræmia, the second kidney being involved in the tubercular process; 2 died of septicæmia following the operation, 2 from peritonitis after the rupture of a perinephritic abscess; 2 of general disseminated tuberculosis, and one from amyloid disease of the other kidney, the cause of death in 2 cases not being given. Among the 22 cases which died at a later period than one month the cause of death was not stated in 9, which leaves but 13 to be accounted for. Among these, both kidneys were tubercular in 6, 2 died of general miliary tuberculosis, 4 of pulmonary tuberculosis, and one showed amyloid disease of the second kidney. The 8 which were noted as improved were found to be suffering, one from cavities in the lungs, another from tubercular abscesses in other portions of the body, 2 had persistent fistulæ denoting continued development of the tubercular disease, one complained of pain and vesical tenesmus, in another the second kidney was involved in the tubercular disease,

and in 2 no definite cause was given for classing them as improved. The 10 cases which were noted as cured are the most unsatisfactory ones to deal with in this group. In 6 out of the 10 it was very questionable indeed whether the patients were really suffering from tubercular disease of the kidney, and from the symptoms and general description of the cases it seemed almost certain that they were suffering not from tubercular but from other forms of pyelitis or pyelonephritis. This leaves but 4 out of the 55 which were probably tubercular. Among these one had remained well for 3 years after the operation, another for 3 months, the third was noted as a recovery "per primum," with no note of final result, and the fourth case was lost sight of soon after the operation. These figures would seem to class nephrotomy as only a palliative method of treatment and not worthy of being placed among the curative operations.

RESULTS FOLLOWING PRIMARY NEPHRECTOMY.

I have 191 cases who had undergone this operation, with the following results: among the 191, 106 were classed as cured, 31 were improved by the operation, 37 died within one month after the operation, and 17 died at a later period than one month. As cures I have only taken those cases which presented no later symptoms of tubercular disease.

In looking more closely at the 106 cases cured, in the first place it is found, that in 26 the duration of cure was not noted, leaving 80 in whom duration of cure was between one month and 12 years; 25 of these remaining cured over 2 years, 21 over one year, and 34 between one month and one year. The 31 cases classed as improved include 8 who were suffering only from a persistent fistula, which had lasted from one month to 24 months, the patient being otherwise well, and it is probable that among these 8 a certain number could later be classed as cured, for it has been found that the fistula occasionally heals, due either to changes occurring in the non-functionating ureter, or to the fact that these fistulæ occasionally are due to a suture lying deeply in the tissues. In 7 cases symptoms were given which indicated probable tuberculosis of the second kidney, and though some of them had lived perfectly comfortable for 4 or 5 years, the outcome would be probably fatal from tuberculosis.

Certain tuberculosis of the second kidney was proved in 3 cases, 4 suffered from tuberculosis of the lung, and 3 from persistent tuberculosis of the bladder.

A study of the deaths following operation reveals several important facts: in the first place, out of the 54, 37 occurred within a period of one month, 14 of these dying within 48 hours, the remaining 23 living from 48 hours to 23 days. Nine out of the 37 were noted as dying of uræmia, 3 more had tubercular disease of the second kidney, and in 2 others there was amyloid degeneration of the second kidney; thus, 14 out of the 37 died within one month after operation from some disease of the second kidney. With our present means of determining the condition of the second kidney this immediate death from tubercular or amyloid disease of the kidney left in the body should not happen, and it is but natural to suppose that the 9 which were noted as dying of uræmia the cause not being stated, may also be regarded as cases of either amyloid degeneration, tuberculosis, or chronic nephritis, so that we have 14 in which at the present time the condition of the second kidney might have been discovered, and an immediate death prevented; though naturally in these cases a fatal result would have followed later from the disease itself.

Collapse, shock or exhaustion were the immediate cause of death in 7 cases, and the lesson that can be learnt from these is, to perform a primary nephrotomy with secondary nephrectomy in the doubtful cases.

Peritonitis was the cause of death in 4 cases, and may probably be ascribed to faulty technique, as with the present extra-peritoneal method of removing the kidney and ureter the peritoneal cavity need not be opened.

Septicæmia was the direct cause in 3 cases, and seems a small number when we consider the lowered resistance of the patient, the lessened power of eliminating toxines, and finally the large wound opened for the entrance of various infectious organisms.

Hemorrhage was the cause of death in 2 cases, one case certainly following the removal of a clamp which had been used instead of a ligature, to control the renal vessels. The remaining causes of death, carbolic acid poisoning, necrosis of the gut, septicæmia from deep ulceration of the bladder, etc., are rare

and might occur at any time, and are therefore of slight importance in studying the immediate results.

The chief facts which we may gain from these figures seem to be the indication for careful study of the other kidney before operation, for the use of the extra-peritoneal operation, and for the avoidance of the clamp method of controlling the renal vessels.

Deaths at a later period than one month also reveal several important facts. I find in the first place that out of the 17 deaths, 12 were due to tuberculosis of some other organ, and this would point either to a careless examination of the patient before operation, or to an occasional early bacterial metastasis from the kidney. A second fact which seems to me of importance is the small number of deaths occurring at a period later than one month, which shows that the prognosis after the immediate effects of the operation are over is extremely good. A third point which is developed, is the perfect ability of one kidney to carry on the body work if it be healthy, for among the 17 deaths but 6 were due to the kidney condition; of these 2 followed tubercular disease of the second kidney, a third followed complete anuria from blocking of the ureteral orifice by a ureteral calculus, one died of pyelonephritis not tubercular in character, another death followed scarlet fever 3 years later, the kidney showing results of acute nephritis but not being tubercular, and the sixth death may be also attributed to the kidney, as the patient died of acute peritonitis following most probably the rupture of a perinephritic abscess.

RESULTS AFTER PRIMARY NEPHROTOMY, FOLLOWED BY LATER NEPHRECTOMY.

In this class there are 49 cases among which 23 were noted as cured, 7 were much improved or improved, one was not improved, and 18 died within one month or at a later period. The duration of cure was stated in 18, the period extending from one month to 7 years. Among the 7 who were noted as improved, 4 suffered only from a lumbar fistula, one had tuberculosis of the lungs, and another had probable tubercular disease of the second kidney. Among the 18 deaths 11 took place within one month, the time varying from 2 to 28 days,

the causes being about the same as found after primary nephrectomy. Uremia was the cause of death in 2 cases, nephritis in another case and a tuberculosis of the other kidney in the fourth one, so that 4 out of the 11 probably died of uræmia. In one case there was fatal hemorrhage following the removal of the clamp on the renal vessels; one died of shock following the operation, one of general miliary tuberculosis, and in the other cases the cause of death was not noted. The late causes of death were due chiefly to tuberculosis as found true in primary nephrectomy.

RESULTS FOLLOWING RESECTION OF THE KIDNEY.

I have obtained from a recent monograph by Max Wolfe (*die Nierenresektion und ihre Folgen*, Berlin, 1900), 9 cases of resection of the kidney for renal tuberculosis. Among these, 2 recoveries were noted, lasting respectively one and two years; two others were reported as cures on leaving the hospital, though they were lost sight of at that time. Of the remaining five, one had developed tuberculosis of the second kidney, one had an operation for tuberculosis of the testicle, and three were dead, one dying five hours after operation, and two at a later period from lung complications.

CONCLUSIONS.

The following conclusions seem justified from the study, both of the individual cases and from the statistics which are gathered above:

1st. That in renal tuberculosis some form of surgical treatment is always indicated.

2nd. That this surgical treatment may have a palliative or curative effect in view, depending upon the condition of the patient and extent of the disease.

3rd. That nephrotomy as a palliative operation for the immediate relief of dangerous symptoms is most valuable, and that it does not preclude a later nephrectomy.

4th. That resection of the diseased part of the kidney is contra-indicated in every case of renal tuberculosis.

5th. That nephrectomy or nephro-ureterectomy is indicated in every case where tuberculosis has not developed in other organs, or where there is no fatal disease of other organs.

6th. That tuberculosis of the bladder or a small focus of tuberculosis in one lung are not considered as contra-indications to nephrectomy.

7th. That primary nephrectomy or nephro-ureterectomy when performed in suitable cases has been followed by final cure in 56 per cent of the cases operated on.

8th. That with the present advances in the methods of examination and in the technique of operations, the percentage of final cures should be materially increased.

511 Cathedral Street, Baltimore, Md.

PROGRESS IN SURGERY, 1899-1900.*

B. F. KINGSLEY, M.D.

In reviewing briefly the progress of surgery for the past year, there is no startling new operation to report; no new organ has been sacrificed, nor cavity invaded, nor can there be anything new to those who have free access to medical literature, but everywhere a spirit of conservatism has been manifest from which both medicine and humanity have been the gainers.

From a more comprehensive review and scrutiny into methods and technique, and insistence on earlier operations in many diseases, and with clearer conceptions of surgical pathology, the mortality rate in many operations has been steadily lowered. The conservatism born of longer experience and more enlightened pathology, has nowhere been more apparent than in relation to diseases and injuries of the head and chest, where fewer operations have been done; nor has the recovery rate been so markedly improved as in other fields, except perhaps in brain abscesses and wounds, and in operations for draining the chest.

Operations upon the stomach have been numerous and accompanied by brilliant results, especially in resection and gastro-enterostomies. A case of the former is reported by A. Richard, in which the stomach, first portion of duodenum, and a larger

*Address of Chairman of Section of Surgery, at meeting of Texas State Medical Association, held in Waco, Texas, April 24-27, 1900.

portion of the pancreas was resected for epithelioma. The patient was alive and well eleven months after the operation and had gained fifty-two pounds. The writer reports eight pylorectomies with one death. In gastro-enterostomies the Murphy button has demonstrated its superiority over suture in the hands of Czerny whose mortality is 12 per cent, and Roux in 31 cases to 9.6 per cent.

A unique and brilliant operation is reported by Dr. Schnitzer of St. Paul, Minn. The partial resection of the pancreas and greater curvature of the stomach, and entire removal of transverse colon with lateral suture of the superior and inferior mesentric veins. The patient several months after was alive and well.

It is claimed that 90 to 100 per cent of primary cancers of the gall bladder and ducts are due to gall stones: a recognition of this fact and early operations has enabled Robeson and Kehr to reduce their mortality to 6 per cent in these operations. The gall bladder, it has been learned, is far more tolerant to surgical manipulation than heretofore supposed, and its contents less dangerous as a rule. Several successful operations upon this viscus has forcibly impressed this view upon my mind.

In resections of the bowels and in intestinal anastomosis by various methods the recovery rate has steadily improved. On no other question has controversy waxed so warm, or has there been so much written, as on that of Appendicitis. In this disease as for all important operations, the exact and final position it should occupy can only be determined by time, controversy and ultimate consensus of opinion. That appendicitis is a surgical disease demanding prompt surgical intervention in a vast majority of cases seems to be pretty well settled. In proportion, as it is recognized, has the mortality following the operation fallen until in some hands it amounts to only 2 per cent, whereas the best showing for medical treatment is about 25 per cent. Should it need any other argument to give it its proper place in relation to medicine and the medical practitioners?

In operations for hernia, the Bassini operation in low mortality rate and freedom from recurrences and other unfortunate sequelae may be safely said to have taken its place at the head.

All operations likewise upon the kidneys, pancreas and liver

have been accompanied by better results. Bladder operations have been numerous everywhere during the past year and followed by most gratifying results: suprapubic cystotomy for stone, multiple organic stricture where false passages exist and for prostatectomy, has steadily gained in favor, although not preferred over the perineal route, or litholopaxy by many.

A choice between the latter and Bottini's operation in prostatic hypertrophy has elicited some able papers, and has shown a mortality in each of about 9 per cent with tendencies favoring the supra-pubic method. Dr. Kelly has diagnosed stone in the ureter by vaginal palpation and verified it by the introduction of wax-pointed bougie into the ureter, identations on which were left by the stone, and a hydro-nephrosis evacuated; the ureter dilated allowing the stone to pass, which he thinks is the first instance of the kind recorded, although the originality of these observations is disputed. He suggests that it would be possible by using cocaine to cut into the ureter through the vagina and remove the stone without the use of an anesthetic.

There has been much said and written pro and con on the question of vaginal and abdominal hysterectomy with the result of showing similar mortality rates of from 2 to 4 per cent, with the greatest weight of evidence favoring the abdominal method.

In operation for perforation in typhoid fever, the progress in the past year has been immense, and valuable new ideas have been added to our stock of knowledge. From a careful study of the subject and a series of 159 cases collected by Professor Keen from different surgeons, he shows a recovery rate of 28 per cent, and thinks with a proper recognition of the perforation and timely operation, the recovery rate may become as high as 30 to 33 per cent, whereas in unoperated cases only 5 per cent recover. "Under 25 years is the most favorable age." Operations on the male have been five times as great as on the female, yet in the latter the recovery rate has been twice as great. He would not operate till the primary shock has passed off. He agrees with Cushing, who was first to suggest the use of cocaine in this operation instead of chloroform, and thinks the use of the latter adds to the danger.

The X-ray has lent its aid and thrown much light on the diagnosis of aneurisms, lung cavities, neoplasms, fractures, gun-

shot wounds of the abdominal cavity and elsewhere, and has stimulated the hope of restoring the blind to sight in many instances, and has enabled the surgeon to proceed more boldly and surely, and with better results. Thus the achievements of surgical science the last year have been chiefly displayed in perfecting the surgical methods and technique of the last decade or two, and lowering the death-rate from nearly all operations.

San Antonio, Texas.

A DISCUSSION OF THE WALCHER POSTURE.*

R. E. CUTTS, M.D.

UPON investigation we find that various postures in confinement have been used for centuries. Some of the Indian tribes of the Pacific slope make use of the knee-elbow position, and when a squaw attends a white woman, which has been quite common in the past, she requires her patient to assume this position.

We learn from a book written by Mercurio for midwives, early in the seventeenth century, that he practiced making marked extension of the thighs during delivery. Several other writers in olden times have made use of postures to bring about the same result, but so far as can be ascertained, the use of this posture has been empirical rather than from knowledge obtained from scientific research.

In 1889, Walcher announced that by putting the patient on a table so as to let the hips rest on the edge, and permitting the limbs to hang down, a gain of one-third to two-thirds of an inch in the length of the true conjugate will be secured. This has since been denied by good authorities.

The combined Walcher-Trendelenberg posture is highly recommended by some; this consists in raising the patient on a Trendelenberg table so that the hips rest on the apex of the table instead of the knees, thus permitting the thighs to extend to their fullest extent. This position may be readily obtained by using an ordinary straight backed dining chair, face downward, across the bed, tying the patient upon the chair, as described by

*Read before the Minnesota State Medical Society.

Dr. R. L. Dickenson in the December, '98, "Journal of Obstetrics." The combined method is superior in such operations as high forceps, version, and reposition of the cord, and allows the operator to assume a much more comfortable position in difficult forceps deliveries.

However, if we are to expect any gain in the measurements of the superior strait it must be sought in the principle set forth in the Walcher posture, viz.: the extension of the ilium on the sacrum.

The mobility of the sacro-iliac joint will vary considerably, depending upon age, sex, pregnancy, etc. There are some cases of complete bony ankylosis of these joints, and in such the Walcher posture gives no gain.

Gray, speaking of the sacro-iliac articulation, says: "The surfaces are lined with a roughened cartilage, which in early life, and in the female during pregnancy, is smooth and lined by a delicate synovial membrane." We know that in some instances these and other joints of the pelvis become so loosened in the later months of pregnancy that locomotion is difficult.

Granting that there is more or less motion in this joint during pregnancy, let us see what change occurs when the Walcher position is assumed.

On examining the skeleton we see that the promontory of the sacrum is superior and anterior to the line representing the axis of rotation of the sacro-iliac joints. Therefore when the thighs are extended as in the Walcher posture the ilio-pubic arch is rotated on the sacrum, so as to bring the symphysis pubis further from the sacral promontory. In other words, marked extension causes a lengthening of the true conjugate and therefore aids engagement of the head in the superior strait, while marked flexion causes a lengthening of the antero-posterior diameter of the inferior strait.

In examining a female subject at the University of Minnesota laboratory I found, by actual measurement, the true conjugate to be four and one-quarter inches when the subject was lying flat on its dorsum. The Walcher posture increased this measurement to four and three-eighths inches, while marked flexion diminished it to four inches, making a difference in length of the true conjugate between complete flexion and extension of three-

eighths of an inch. It is quite probable that this measurement would be increased in the living pregnant state.

While the difference of an eighth of an inch in favor of the extended position is not much, yet it may be enough to materially help in high forceps operation.

The transverse and oblique diameters remain unchanged in the extended position, yet all lines radiating from the promontory to points of the superior strait are increased in somewhat the same proportion as the true conjugate.

From the conditions found, we conclude that at least some cases of dystocia at the superior strait will be benefitted by the Walcher posture; while flexion as assumed in the use of the Clover crutch or the Robb leg holder will aid in cases of dystocia of the inferior strait.

802 Dayton Building, Minneapolis, Minn.

AMERICAN GYNECOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at Washington, D. C.,
May 1, 2, and 3, 1900.

FIRST DAY.

THE PRESIDENT, DR. GEORGE J. ENGELMANN, OF BOSTON,
MASS., IN THE CHAIR.

The address of welcome was delivered by Dr. Joseph Taber Johnson, of Washington, D. C.

The first paper read was by Dr. William P. Pryor, of New York, on "An Operation for Primary Vaginal Carcinoma, Applicable also to Cancer of the Rectum in Women." Primary cancer of the vagina is a rare form of malignant disease. It is usually situated on the posterior vaginal wall and extends rapidly towards the rectum and perivaginal tissues. The cancer is prone to spread by invasion of the tissues having common sources of blood, and any successful operation must seek the removal of all the organs belonging to the vascular group in which the affected organ is placed. It also recurs locally. In Lowen-

stein's case recurrence took place after three and a half years. In both of Pryor's cases it recurred within one year. The operation of Olshausen consisted in a blunt dissection of the vagina from the rectum, which usually resulted in failure and early recurrence. Pryor reported two cases, the first, cancer of the rectum and vagina, ulcerated and infiltrated, involving the posterior vaginal wall one and a half inches. The second, cancer of the vagina, occurring one inch below the cervix on the posterior vaginal wall. The operation employed by Pryor has the distinct advantage of removing as thoroughly as possible all the diseased area. After the usual preparation of the patient an incision from the pubis to the umbilicus is made and the internal iliac arteries and the obturator vessels are ligated with kangaroo tendon, the bladder is dissected from the anterior uterine wall and the vagina opened anteriorly. The uterus and appendages with the entire rectum are later removed after the actual cautery has been used to char the cancerous mass. After the excision of the rectum and periproctal tissue, an artificial anus is formed near the normal site. This radical operation has a surgical basis in the following principles: (a) The preliminary and preventive hemostasis renders the field of operation comparatively dry, and there is less danger of transplantation of cancer-cells during the subsequent manipulations; (b) avoidance of injury to the cancerous field until hemostasis is secured and the cancer charred; (c) there is removal of all organs in which recurrence is apt to take place from above downward; (d) establishment of an artificial anus near the normal site.

DISCUSSION.

Dr. Munde said that he had seen only two cases of primary cancer of the vagina in his long experience; these cases were practically inoperable—only curetment and cauterization was done which relieved the symptoms temporarily. He does not consider that such a bloody and radical operation repays, as the benefit to the patient is slight and the recurrence inevitable.

Dr. Sutton, of Pittsburg, has seen but one case in thirty-four years' experience. He has little faith in the radical operations for malignant disease of the genitalia. He considers that the causation and pathology, rather than new methods of operating

should engage our attention, as we need to find the factor producing cancer in order to combat it successfully.

Van de Warker, of Syracuse, feels that nothing is gained by operating for cancer. If his cases recover and the disease does not recur he concludes that the condition was not cancerous.

Montgomery, of Philadelphia, said that in no class of cases is the relapse so likely to recur as in cases of cancer of the vagina; the thin vaginal wall and the abundant lymphatic circulation is responsible for this rapid return of the disease. In 1892 he had operated on a case of cancer of the rectum and posterior vaginal wall by the Kraske method, after a preliminary Maydl operation, and had removed the uterus and appendages with the posterior vaginal wall and five inches of the rectum. The disease soon recurred. He does not believe that operative treatment has much value in these instances. There is no method of treatment by which one can insure the patient against a recurrence, and no way of determining how extensively the glands and perimetritic structures are involved. The present position in regard to these cases is one of experimentation.

A. Laphorn Smith thinks that often unsuccessful operations on the cases deter other patients from being operated upon that might be relieved.

Burn has felt for years that radical hysterectomy was a useless operation in these cases and prefers high amputation of the cervix with galvanocautery as the preferable procedure.

Reamy has had more satisfactory experience and has had his patients live many years after high amputation of the cervix for undoubted malignant disease. The prognosis depends upon the position of the cancer and extent of invasion.

Dudley, of New York, confined his remarks to primary vaginal cancer. He had operated on two cases, and considers the disease returns here more quickly than elsewhere in the body. He believes that Pryor's operation does the best that can be done for these desperate cases, and is heartily in favor of this method.

Dr. Pryor, in conclusion, said that very probably we would soon have positive evidence that the cancer-bacillus had been demonstrated and that he would not be deterred from operating on a given case, if he thought relief could be afforded by the con-

sideration of remote cases that might be prevented from subjecting themselves to necessary surgical procedure because of the ill results ensuing.

Dr. I. S. Stone, of Washington, read a paper on "Fecal Fistulas." (See page 522).

Dr. W. L. Burrage, of Boston, read a paper on "The Remote Results of Conservative Operations on the Ovaries and Tubes." (See page 514).

Dr. A. W. Johnston read a paper on the "Internal Secretion of the Ovary." (See page 523).

Dr. Hiram N. Vineberg, of New York, read a paper on the "Technic, Indications, and Ultimate Results of Suturing the Round Ligaments to the Vaginal Wall for Retroversions and Flexions of the Uterus." (See page 517).

SECOND DAY.

A paper on "A Comparison of Vaginal and Abdominal Operations," by Dr. G. Richelot, of Paris, was read by title. (See July issue).

Dr. J. Clarence Webster, of Chicago, presented a series of casts illustrating the Anatomy of Pregnancy and Labor, also models used in Gynecologic Teaching. The older textbooks on obstetrics are full of fallacies and errors on this subject and these casts are prepared in exact reproduction of nature, made directly from frozen sections of the cadaver. The method of their preparation was described and attention called to their value scientifically and as teaching adjuncts. Dr. Buckmaster has employed paraffin to secure representations of the pelvic organs, and has illustrated the steps of perineal laceration operation by this method.

A paper, by Dr. E. E. Montgomery, of Philadelphia, on "Combined Nephrectomy and Ureterectomy," was read by title.

Dr. Reuben Peterson, of Chicago, presented a paper on "Anastomosis of the Ureters with the Intestines; an Historical and Experimental Research." (See page 532).

A paper by Dr. J. W. Bovée, of Washington, "A Critical Survey of Ureteral Implantation," was read by title. (See July issue).

The subject of the next paper, by Dr. Howard A. Kelly, of

Baltimore, was "The Evolution of my Technic in the Treatment of Fibroid Uterine Growths." Dr. Kelly, with the aid of drawings and photographs detailed his method, particularly in dealing with very difficult cases, such as large adherent tumors or intraligamentous fibroids. There are three ways of dealing with these tumors and meeting the complications: 1. By a medium sagittal bisection of the uterus with the tumor. 2. By a coronal bisection of the uterus in the cervical portion. 3. By a bisection of the tumor alone. The situation and anatomic relation of the tumor should be thoroughly studied after the abdomen is opened, before beginning operation. The dangers to be avoided are brought about by atypical cases; the hemorrhage may be excessive and uncontrollable, prolonged operation and injuries to the intestines and ureters may jeopardize the patient. In all these cases the principle of the operation is the same, and the best method of enucleation is to seek out first, isolate and ligate the ovarian vessels of *one* side, then to expose and tie the uterine vessels of the *same* side, then to cut across the cervix and clamp the opposite uterine artery, then the round ligament, and lastly the ovarian vessels.

Dr. George J. Engelmann, of Boston, read the annual President's address.

The subject of the paper by Dr. A. Laphorn Smith, of Montreal, was "An Appreciation of Kelly's Method of Removing Fibroids of the Uterus." (See page 539).

Dr. F. H. Davenport, of Boston, described an Intra-abdominal Amputation of the Uterus; a Modification of Hysterectomy. In cases of cancer of the cervix or body of the uterus he employs the vaginal hysterectomy, but in nonmalignant conditions, even in small growths, particularly in young married women, he prefers supravaginal hysterectomy, permitting the cervix to remain. After careful study of the technic he thinks that not only the cervix but even part of the lower uterine segment may be left without ligating or disturbing the uterine artery, by doing a high amputation of the uterus. He first clamps the broad ligaments and divides them, then divides the uterus high up, having a curved needle armed with silk, introducing a continuous suture, controlling the bleeding as he cuts; later the clamps are removed and the ovarian vessels are ligated. The organ being re-

moved above the vesico-uterine peritoneal fold, there is practically no danger of injury to the ureters or bladder.

DISCUSSION.

Pryor described his method of treating intraligamentous fibroids by bisecting the uterus and enucleation of the intraligamentous nodules. After their removal the then symmetrical uterus can be safely removed by the ordinary method.

Dr. Seth Gordon has for a long time employed the continuous suture in hysterectomy and is then certain that all the vessels are secured. He condemns strongly the use of chromicized catgut in abdominal surgery, as he believes it is not easily absorbed, and usually employs the ordinary catgut; does not use silk because non-absorbable. He thinks the sutures should be permitted to remain in abdominal incision for at least two weeks until complete union has occurred.

Dr. Mann, of Buffalo, thinks that cutting the upper part of both broad ligaments after ligation often will permit the elevation of the uterus and facilitate extirpation of growth. By Kelly's method one may get the growth out very quickly, but it will require much time to complete the operation. He leaves a part of the cervix in place and drains through the dilated cervical canal.

Dr. Baldy has had two cases recently in which the tumor extended over the bladder and he made the posterior incision through uterus to safely remove. He thinks that Kelly's method is of much value in the difficult and unusual cases, but it is not valuable as the routine method, and is a dangerous operation for general surgeons or untrained gynecologists. He cited two cases in which the ureter had been injured in following the plan.

THIRD DAY.

Dr. Thaddeus A. Reamy, of Cincinnati, contributed a paper on "Bronchial Disease not Invariably a Contraindication for Ether-Anesthesia in Abdominal Surgery." His personal experience with surgical anesthesia covers 8,000 cases. For surgical work he considers ether in every way preferable as an anesthetic. He has, however, never lost a patient under either ether or chloroform. The prejudice against the use of ether in the presence of acute, sub-acute, or even chronic bronchitis, is

largely unfounded, provided proper conditions are observed in its administration. These conditions include proper preparation of the patient, that this anesthetic be administered in the operating room, the temperature of which must be from 98° to 100° F., the chest and trunk of patient lower than the pelvis and lower extremities, and the ether of pure quality. He thought ether-pneumonia was probably produced by ether-inhalation. He has seen bronchitis, both acute and chronic, at once cured as a result of ether-anesthesia; these results, probably, being due largely to its action upon the respiratory mucous membrane. In some instances he does not hesitate to administer it to patients suffering of severe bronchorrhea, but would not employ ether in the presence of emphysema. He would, of course, not employ ether when the patient is suffering from Bright's disease, but he has rarely seen damage to the kidney follow its administration in properly selected subjects. It is his custom in subjects for abdominal or vaginal section, to administer four or five grains of calomel four hours before the operation, and he orders that they have hypodermically one-sixth of a grain of morphia and one-hundredth of a grain of atropia, twenty minutes before the section. The calomel he has found a good foundation for securing purgation by salines within twenty-four hours after the operation. He orders such patients to drink freely of water, and believes that all these protect the kidneys and respiratory organs from damage from anesthesia.

DISCUSSION.

Dr. McLean advises a warm, quiet room, and believes that if no confusion or conversation is permitted, one-third the quantity of ether will be required.

Dr. Harris prohibits conversation in the anesthetizing room, and permits nothing to divert the attention of the patient from the anesthesia.

Dr. Archibald McLaren, of St. Paul, read a paper on "The Relationship Between Dysmenorrhea and Appendicitis." He spoke of the unsatisfactory results usually obtained in the treatment of dysmenorrhea and the necessity for prolonged general treatment. Pelvic inflammation is frequently the cause of dysmenorrhea and appendicitis causes disease of the appendages, and the appendix is frequently found adherent to the right appen-

dage. In many cases appendicial colic is caused by the pelvic congestion at the menstrual period. The pain is principally on the right side and the symptoms are relieved by removal of the appendix. He detailed several illustrative cases in which the entire menstrual pain was relieved by removal of the appendix. In forty per cent of cases of inflammatory disease of the appendages he removes the appendix.

DISCUSSION.

Skene has noted many cases in which the ovarian pain has disappeared after a removal of the appendix. He uses the hemostatic forceps as the best method, diminishing danger from hemorrhage and infection.

Laphorn Smith has frequently found the appendix firmly adherent to the sac of a tubal pregnancy or tubo-ovarian abscess. The combination of appendicitis and salpingitis is present in many cases. He thinks this fact an argument against the vaginal methods of dealing with intra-pelvic lesions.

Dr. Philander A. Harris, of Paterson, N. J., demonstrated the utility of a certain Chart for the Determination of Pelvic Asymmetry from a very simple method of External Pelvimetry. He exhibited the instrument employed and urged the more frequent use of the pelvimeter. The best interest of the patient and physician demands this study of pelvic measurements. Harris also exhibited photographs illustrating the advantages of employing a certain background in the photography of pathologic specimens.

Dr. Malcomb McLean, of Detroit, read "A Contribution to the Management of Face Presentations, with Report of two cases." He reviewed the methods of dealing with the head thus faultily placed. Schatz had advised converting the face presentation into a vertex while the head is free above the superior strait and the membranes are unruptured; but there are usually two difficulties to contend with: (1) the diagnosis of the malposition is not so easy as the textbooks indicate, and if descent is far advanced it is too late to employ Schatz's method; (2) it is difficult to secure the normal position and relapse to the abnormal is apt to occur. McLean's method is practically version by the vertex within the pelvis, and is performed as follows: The patient being under full anesthesia the hand is passed carefully

within the vulva, with the outside hand seizing the body of the child. In the entire absence of uterine contractions, the chest is pushed as much away from the pelvic brim as possible from the point toward which the chin is pointing in the direction of the occiput, that is pushing obliquely from behind forward; at the same time the fingers of the vaginal hand are pushed up alongside of the head in one or other of the oblique diameters of the pelvis so that they can reach the suboccipital portion of the head. The thumb at the moment steadies the brow and, with a slight lifting motion imparted to the whole of the head, it is caused to rotate on its axis as described, the chin passing upward above the sacro-ischiatic notch as the occiput is drawn down below the pubes. Flexion may be considerably hastened through pressing down the occiput by the outside hand as soon as the face is dislodged from its wrong position.—*The Philadelphia Medical Journal*, May 5, 1900.

THE SUCCESSFUL TREATMENT OF THE ALBUMINURIA OF PREGNANCY ACCOMPANIED BY GASTRIC DISTURBANCE.

EDWARD A. SCHUTZ, M.D.

It is my desire to bring to the notice of the profession a new and important use to which Taka-Diastase may be adapted, either alone or in conjunction with a solution of iron peptonate and manganese. A case in hand which I had been engaged to attend in confinement may be of interest.

About three months ago this patient became the victim of a violent corporeal pruritus, which I thought was caused by a gastric disturbance. The eruption resembled urticaria, though it differed from the latter in the size and degree of elevation of the wheals. An examination of the urine disclosed the presence of albumin in considerable amount, whereupon I prescribed Basham's mixture and the usual remedies for dyspepsia. This treatment was continued for five days, during which time the patient grew worse until she was almost frantic with the bodily itching. A gradually increasing cystitis made its

appearance and the albuminuria continued. The urine was highly acid in reaction and was voided with considerable vesical tenesmus.

I immediately placed the woman upon Taka-Diastase, dissolved in a solution of iron peptonate and manganese, with the result that complete relief of her pains and itching followed within twenty-four hours, while a further analysis of the urine revealed a marked diminution in the proportion of albumin. The administration of Basham's mixture was not discontinued. I directed the druggist to neutralize it with ammonia, and ordered it to be given three hours after meals, while the Taka-Diastase was given at meal time. After the lapse of five weeks there had been no return of the symptoms, an effect which I have never observed before in similar cases, from the use of Basham's mixture alone.

The albuminuria was doubtless indicative of a functional derangement of the renal circulation due no doubt to the gastric disturbance, rather than to a mechanical interference by pressure of the gravid uterus upon the renal veins.

From the history of this case and one other now under treatment, I am inclined to think that Taka-Diastase should be given the benefit of further experimental study in the treatment of the albuminuria of pregnancy accompanied by gastric disturbance.

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NOTE.

In a brief article in the *St. Paul Medical Journal*, of April, 1899, Dr. Vieregge expresses himself as follows regarding heroin—at that time a recent addition to the *materia medica*:

“In my estimation this drug seems to be a very valuable adjunct to the list of narcotics which we are called upon to use in our chronic cases of bronchial affections with dyspnea and irritative cough, and as soon as the remedy is in the market I would advise to give it a fair trial, as the dose is much smaller than that of either morphine or codein, and the after-effects are nil.” This preliminary statement by one of the most conserva-

tive Western clinicians has been amply confirmed by the extensive literature since then published, including reports by some of the most distinguished authorities in Europe and America. Aside from its use in chronic bronchial affections, heroin has become a standard remedy in the treatment of phthisis, in which it not only alleviates the cough, but also arrests night sweats and promotes sleep. Since attention was called to the analgesic properties of the drug by Professor Eulenburg, it has been utilized by others in painful affections with very encouraging results. Even its local application on tampons has proved efficient in the treatment of uterine affections, an observation to which attention was first directed by Dr. Mirtle, and lately by Dr. S. A. Milliken (Alkaloidal Clinic, April, 1900), who has used heroin with much success for the relief of utero-ovarian pains.

CARE OF CATHETERS.

Dr. J. C. Gouley states that web and rubber catheters are much injured by fats of all kinds, by glycerine and vaseline, and that the best lubricant is soap, deprived of glycerine and free alkali, and mixed with mucilage of chondrus crispus. He recommends the following formula:

R.	Powdered white castile soap.....	1 ounce.
	Water	3 ounces.
	Mucilage of chondrus crispus.....	3 ounces.
	Formalin (40 per cent.).....	10 minims.
	Thymol	5 grains.
	Oil of thyme.....	5 minims.
	Alcohol	15 minims.

Mode of preparation: Heat the soap and water, and stir until a homogeneous slime is formed; then add the mucilage (one ounce of chondrus crispus to one pint of water); when cool pour in the formalin, then the thymol and oil of thyme mixed, with the alcohol; stir, strain and keep in a covered vessel until all air-bubbles have vanished. The result is an opalescent substance of the consistence of honey, which should be put up at once in two-ounce collapsible tubes and sterilized.—*New York Medical Journal*, Nov. 4, 1899.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

REPORT OF A CASE OF MENINGITIS FOLLOWING MEASLES; RECOVERY.*

H. A. WEST, M.D.

The following report is interesting from several standpoints: 1st, the occurrence of a very rare complication of measles; 2nd, the coexistence of a second and probable third infection; 3rd, recovery from an apparently hopeless condition.

On March 12, 1900, I was called to see M. D., female, age 11; a delicate looking child with rather a nervous temperament; health previous to present attack had been fairly good. I found she had been complaining four or five days. The ordinary prodromata of measles were present, the eruption was just beginning to appear upon the face and upper anterior portion of the chest. A simple expectorant was prescribed, and the patient ordered to be kept in bed.

Nothing more was heard from the case until the evening of the 16th; responding to an urgent call, I was informed that the child had done nicely until about 3 A.M. on this date. The eruption had faded with some branny desquamation, the fever had subsided, but speedily following a general abatement of all the symptoms a sudden accession of fever had occurred. I found a temperature of $104\frac{1}{2}^{\circ}$ F. in the axilla; she complained of pain in the left ear, dizziness, and sore throat. The tonsils were red and swollen; there was no exudation upon them or in the pharynx.

Appreciating the preponderating frequency of pulmonary complications in measles, a careful physical examination was made of the lungs, which was repeated at several subsequent

*Read before the Texas State Medical Association, Waco, April 24, 1900.

visits, signs only of a mild, moist bronchitis were found. There was no evidence at any time, either subjective or objective, of the existence of pneumonia.

I shall not attempt to give in detail the symptoms which followed, noting the more important and significant ones.

The decided tendency to somnolence which was observed at the accession of this exacerbation, gradually deepened into profound coma, and by the 20th the child was totally unconscious. The temperature was persistently high, varying from 104° to 105° F. in the axilla; when reduced by baths and antipyretics it would rapidly rise again. The pulse was hard, and rapid in proportion to the height of the fever, varying from 110 to 120. The pupils gradually became contracted and irresponsive to light. Slight divergent strabismus was noted towards the end of the first week. The senses were all completely obtunded. There was no evidence of sight, hearing or sensation. The decubitus was dorsal; no tenderness over the spine or headache was apparent. There was no marked muscular contraction, though the mouth had to be forced open, and fluids would be swallowed when placed in the pharynx. The bladder soon became parietic, the catheter had to be used twice daily. The amount of urine was fairly abundant, it was slightly albuminous. The tongue was thickly coated, and red at tip and edges. Sordes collected upon the teeth. Herpes was not observed.

Nausea, vomiting and diarrhœa were noted during the eruptive stage, but at the advent of the secondary fever there was no more vomiting and the bowels became constipated; when they were finally moved by purgatives, stools would occur involuntarily. After remaining in this condition about a week, when there was no apparent ground to justify a hope for recovery, the first sign of returning consciousness appeared. There was then a gradual restoration of the mental functions, subsidence of the fever, and abatement of all the symptoms. The patient had to be catheterized during the subsequent week. Though every effort was made to maintain cleanliness and prevent the child from remaining upon her back, an inflammatory patch about the size of the hand appeared over the sacrum, which came near developing into a bed sore. The child was unable to move the lower limbs until about ten days after restoration of consciousness,

though sensation was present, and they would respond to reflex stimulation. Power of locomotion was gradually recovered.

At this date, April 17, aside from a marked anæmia and muscular weakness, the normal condition has been restored.

That meningitis involving chiefly the brain had supervened as a complication of measles there seemed to be no reasonable doubt; there was a strong probability also of an intercurrent infection of epidemic influenza. The prognosis was exceedingly unfavorable both in my opinion and that of the consultant. *Treatment:* The attempt was made at the outset to reduce the temperature by the cold bath, and the use of acetanilid and quinia internally, but finding such measures inconvenient and injudicious, cool sponging was resorted to. An ice cap was applied constantly to the head. The lower extremities were frequently bathed in hot mustard water. Calomel, aided by stimulating enemata, was given until free movements upon the bowels were obtained, which was not until the second day. Potassium iodide was then prescribed in doses of 10 grains every four hours, the latter remedy was continued during convalescence. The urine becoming ammoniacal, and evidence of bladder irritation coming on, urotropin was given in 5 grain doses three times daily. During the comatose period milk, nutritious broths and water were given as freely as possible. As consciousness returned more substantial food was given.

The diagnosis in this case involves some interesting questions. Was it meningitis? if so, what form, purulent, tubercular, cerebro-spinal? or was it due to the localization of the pathogenic micro-organism of epidemic influenza? Were the severe nervous symptoms explicable upon the hypothesis of a toxæmia due to an intercurrent infection as typhoid fever or la grippe, independent of any inflammatory lesions affecting the cerebro-spinal centres?

Coming now to a brief consideration of these questions—the ear ache, dizziness, sudden onset and high range of fever were suggestive of purulent meningitis extending from middle ear disease, but the absence of subsequent discharge from the ear or of deafness negatived a meningeal infection from that source.

Tubercular meningitis in the light of the recovery of the patient may now be excluded, but during the course of the attack its probability required consideration.

Toxæmia from typhoid fever may be excluded by the sudden onset of the fever, its short duration, and the absence of rose spots, or abdominal symptoms. Without entering into the refinements of differential diagnosis the question, in my opinion, is narrowed down to the supervention of an attack of epidemic influenza with cerebral localization, or the occurrence of a third complication, viz.: cerebro-spinal fever, in which the convexity, rather than the base of the brain or spinal cord, was chiefly affected. The case differed in its symptomatology from those I saw during the epidemic of that disease last year; there was absence of the excruciating headache, spinal tenderness, muscular contractions, cutaneous hyperæsthesia and irregular febrile course. I am strongly inclined to the view that there was an infection of the cerebro-spinal centres by the influenza bacillus, which is favored by the following statement: la grippe was epidemic at the time, the mother had an attack while nursing the child, the catarrhal condition of the air passages incident to measles would predispose to influenzal infection, and the symptoms at the onset were those of the nervous type of that disease. The profound coma, eye symptoms, disposition to bed sore and parietic condition of the bladder were convincing facts, to my mind, that an inflammatory lesion was present and not a mere toxæmia.

Quotation from the following authorities is conformatory of the rarity of meningitis as a complication of measles. In speaking of the complications pertaining to the nervous system, Osler mentions hemiplegia and paraplegia, but says nothing of meningitis. Wood and Fitz mention only delirium and convulsions followed by coma in young children. Strumpell does not mention any nervous complications, neither does Goodhart. Griffith, in *American System of Medicine*, states that nervous affections are unusual, though he mentions convulsions, paralysis and tubercular meningitis as sequellæ. Louis Starr speaks only of paralysis as a rare accident. Hardway, in *Pepper's System*, quoting Thomas, refers to the occasional occurrence of acute miliary tuberculosis affecting the cerebral meninges, which proves fatal in a few days or weeks. Emmett Holt says: "Meningitis is rare, but either the simple or tuberculous form may occur, more often, however, as a sequel than as a complication." Dawson Williams, in *Allbutt's System of*

Medicine, speaking of the pathology of hemiplegia complicating measles, says it has been attributed to encephalitis, followed by sclerosis or to localized meningitis; he also mentions ascending paralysis and disseminated myelitis; additional citations are unnecessary.

In a paper read before you in 1896, entitled the "Association of Diseases and Morbid Processes," I called attention to the frequency with which several infections might occur simultaneously in the same individual and the reasons therefore. F. F. Caiger* gives emphasis to the same facts; he says, "The fact that two or more infectious diseases are capable of running concurrently in the same individual is not so generally recognized as the frequency of its occurrence would warrant. Hunter went so far as to deny the possibility of such coexistence, and to his teaching must doubtless be ascribed the wide currency to which this belief has attained. Now it is universally admitted that the convalescent stage of many and various infectious disorders is not infrequently interrupted by the appearance of a second; and it is within the experience of those who are daily concerned in dealing with large numbers of cases of the infectious fevers, to find two such diseases running concurrently and in exceptional instances three, or even four. He gives the following list of secondary diseases complicating 48,366 consecutive cases of scarlet fever treated in the hospitals of the Metropolitan Asylum Board:

- In 1094 cases the secondary disease was diphtheria.
- In 899 cases the secondary disease was chicken pox.
- In 703 cases the secondary disease was measles.
- In 404 cases the secondary disease was whooping cough.
- In 55 cases the secondary disease was erysipelas.
- In 55 cases the secondary disease was enteric fever.
- In 1 case the secondary disease was typhus fever.

Similar tables, illustrative of the interrelations of other acute infections, would be interesting, but the difficulty of compilation, except by those who have the opportunity to treat a very large number of cases, is obvious.

Confirmatory of the view that the influenza bacillus was the intermediary cause of meningitis in my case, my friend, Dr.

*Albutt's System of Med., Vol. 3, p. 206.

Halley, of Galveston, informs me of a similar sequence of events in a child two years of age who had whooping cough last December. An intercurrent attack of la grippe was followed by meningitis; the child was comatose about five days, but finally recovered, after an illness of nearly three months.

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HISTORY OF A CASE OF PORENCEPHALITIS.

ROSA ENGELMANN, M.D.

Congenital Porencephalitis often results in prenatal or post-natal cerebral paralysis. My case, however, presented neither observable facial nor general palsy. An examination for elec-



tric reactions was not made. The photographs show an asymmetric head with marked depression of the left parietal region; the site and flap of the craniotomy done by D. Hugh Ferguson;

and the intra cranial cysts. The brain and cord specimen, although not well preserved, show a left-sided microcephaly sclerosis and absence of normal sulci and cerebral convolutions. A cauda equina is wanting and is so poorly developed that I was first led to believe that the spinal plexuses and nerves were also absent. This error was later corrected by a dissection of the vertebral column that gives evidence of their existence. Sections and a microscopic examination have not been made. They probably would exhibit signs of arrested or anomalous development or of diseased nervous tissue. As I mistakenly con-



sidered that the microcephaly, idiocy and convulsions were consequent upon the premature closure of the cranial sutures and fontanelles I resorted to craniectomy for possible relief of the deplorable conditions that at any rate would have shortly resulted fatally. The surgical procedure proved useless but gave to you and me a valuable specimen and serviceable knowledge.

The family history is as follows: Parents, Russian emigrants. Father healthy, without history of alcoholism, syphilis, tuberculosis, nervous or mental diseases; maternal grandfather, consumptive; denial of neuroses on mother's side of the house. But a child born to the mother some years after the

death of my little patient, was brought to me for treatment of rotary and nodding head spasm and laryngismus stridulous. The mother is undersized and has a pronounced dorso lumbar kypho-pelvis. Measurements of the latter made by Dr. Rachel Narros are as follows: Bi-iliac, 21 cc.; Ant. Sup. Sp., 20 cc.;



Exter. Conjugate, 11 cc.; Ant. Conjugate, 9 cc. A very prominent synchondrosis was found two inches to the left. She was married at twenty. Three children were born at term, in normal labors, conducted by midwives. There had been no miscarriage. A fifth and later delivery was surprisingly easy. Two children died at the ages of four and eleven months respectively, of pneumonia and summer complaint; one living, healthy boy, three and a half years old. She was subject to great hardships and fright while carrying this unfortunate babe. She tells me that she was sick in bed three months, with pain in her side. She could not walk. She also describes a sudden

copious white vaginal discharge, in the nature of a flooding; possibly the rupture of an intra-pelvic abscess.

This labor was prolonged and the physician in charge told the husband it was a cross presentation, for which turning and instrumental delivery was done. The babe was asphyxiated and to all appearances dead for twenty minutes before it was resuscitated. When seven months old the infant was brought to me, suffering from almost continuous convulsions, and with the parents' history of a cranial deformity from the instrumental delivery. Upon noticing the synostosis, I informed them of its congenital origin and that I believed this babe's unfortunate state was due to the pressure of the skull cap upon the brain and perhaps might be relieved by an operation. I did not then realize that the synostosis was simply the conformation of the calvarium to an agentic brain sclerosa, or atrophied from early embryonic or placental derangement. The asymmetric elevations and depressions occupied both the left parietal and occipital regions and was accompanied by an absolute synostosis. Some facial asymmetry and a right sided ptosis were manifest; but neither facial nor general paralysis obtained. The child appeared idiotic, deaf and blind; and an internal strabismus existed. An ophthalmoscopic examination was not made.

Convulsions began during the second week, increasing in frequency and severity until almost constant. The movements started in the ocular and facial muscles, and extending, became generally distributed. The body was well developed and nourished. On chiselling, the bone was found to be hardened and thickened, especially at the sutures that were prematurely closed. A cyst was noticed and thought to be hemorrhagic by the operator, but the child was so collapsed that its opening was left for a second operation. Death resulted in two hours after the operation. The brain was removed, and the cord pulled out of the canal was minus the spinal nerves. Other organs normal, except mesenteric glands that appeared tubercular. There were adhesions of the brain coverings and of the latter to the cerebral tissue proper, that when fresh showed decided inflammatory changes, pointing markedly to a recent meningo-encephalitis. The sclerosis atrophy and terminal cystic formation were of a doubtless intra-uterine origin.

As to the etiology: the question of internal pressure during pregnancy can be excluded by reason of the transverse position. It does not seem plausible that labor or forceps pressure could have induced such a sclerosis and atrophy, but that rather it was produced by prenatal inflammatory conditions of long standing, from the possible pus infection of the mother previously mentioned. Since often the maternal placental states lead to a foetal brain embolism followed by areas of softening and final sclerosis, atrophy and cyst formation; viz.: a terminal porencephalia.

Sachs says, "If the mother had some form of purulent disease during pregnancy the cause of such inflammatory meningitis or encephalitis would not be far to seek." Placental thrombosis from somatic and psychic trauma might also induce the brain affection. Besides the prenatal circulatory disturbances already mentioned, viz.: embolasia and thromboses, hemorrhages and inflammation of the middle cerebral artery, or its obliteration in early embryonic life, would be additional etiologic factors. Pressure from within, or the amniotic head cap might early in embryonic life cause arrest of development.

"If the cerebral configuration is influenced by the defect, the beginning of the disturbance dates to before the fifth month of fetal life." Kundrats hypothotizes as to a nutritional ischemia, and consequent malnutrition, while Osler states, "Whatever the nature of the primary lesion, the final state is one of chronic encephalitis with atrophy of convolutions and formation of cysts."

Kahlden shows how questionable and rarely the signs of congenital inflammation are found in Porencephalus and therefore infers a teratologic genesis in the first half of the second fetal period, viz., the second to the fourth month of embryonic life.

But even admitting a teratologic origin, why not believe that the developmental defect is caused by embryonic disease rather than by reversion. Namely, that an agenesis is secondary to active cerebral disorder. Heschl advocates the theory of disease rather than a congenital arrest of development. At any rate, whether or not we have a primary arrest of development independent of active disease, or an inflammatory condition, the terminal condition is one of tissue degeneration, sclerosis,

atrophy and a vacuum evolvment in a closed space, producing a cystic formation and skull cap conformation and synostosis.

51st Boulevard and Lake Ave., Chicago, Ill.

AMERICAN PEDIATRIC SOCIETY.

Twelfth Annual Meeting, held at Washington, D. C.,
May 1, 2, and 3, 1900.

FIRST DAY.

THE PRESIDENT, HENRY KOPLIK, M.D., IN THE CHAIR.

Henry Koplik, M.D., of New York, gave an address upon "The Proper Care and Treatment of Summer Diarrhœa Cases."

The speaker said in part, that he invited the society to a subject so broad and catholic that it could not fail to interest both physicians and laymen. The care of the poor children, whether sick or well, was assumed by the State in some instances, by private individuals in others. Improving the condition of these wards tended to our own betterment. The close housing of the poor during the colder months tended to the increase of accumulating filth and general dirt, to lack of fresh air for breathing, and to little personal cleanliness. If infectious diseases were not also increased the debilitated children were the more ready victims when they were exposed. In the summer the general health improved, but the tendency to intestinal disease increased, as there was an increasing liability to infection from improper or unwholesome food. In France one-half of the children below one year of age died each year from intestinal troubles. In three years eighteen thousand bottle-fed children died in Paris alone. The breast-fed did not escape entirely, but were less liable to intestinal infection. Nearly all children fed artificially got more or less cow's milk, and the many times it was handled gave many chances for infection, not only with animal filth but also dairy dirt, and particularly streptococci, which caused diarrhœa. The great medical congress of 1881 laid great stress on cleanliness. Soxhlet emphasized cleanliness in preserving milk. The greatest lights on the problem were those

relating to cleanliness. It could be successfully accomplished in many ways. The foundation of infant feeding must be the mother's breast, yet this might vary from eighty-nine caloric equivalents to one hundred and twenty-six calories. The absolute quantity at the breast being unstable, our rules for artificial feeding must vary. Meigs showed that the proteids were usually low in mother's milk, and that the fats varied much. Leading minds differed as to how the variations should be accomplished: some diluted only; others, as Meigs and Rotch, reconstructed. Jacobi and others diluted, and added ingredients. The keynote of intestinal disorders was infection; therefore the sick children should always be separated from the well. We had as much responsibility in the intestinal infections as of prophylaxis in scarlatina or measles. The ignorant mother should be taught the possibility of carrying contagion, and that the utmost care should be exercised in washing thoroughly after changing the child's napkins, and that there be no rapid change from toilet operations to feeding. The physician should have constantly in mind the distinguishing characteristics of stools, that he might know when streptococci had disappeared and when milk could safely be resumed. Cases might be treated as ambulatory, coming to a dispensary, or in hospitals and sanitariums. Those patients taken out of doors did best, as they had fresh air. The stools should be examined grossly and microscopically at a laboratory in connection with the dispensary. For ten years the speaker had so managed his intestinal cases; and two hundred infants daily, the year around, received their proper milk supply there at the dispensary. Increasing weight encouraged the mothers. Mothers should not be allowed to get prepared or modified milk except on a physician's order, as they usually overfed. Even water was furnished for the preparation of albumin water. It impressed upon the mother the necessity of attention to details. Examining the stools was not a fad. It was a sure way of determining the proper treatment and food. The speaker advocated, as the ideal management, the treatment of one or two cases only together, in barracks or camps or huts on high ground, not necessarily near the seas but inland. These tents or camps could be comfortable but very simple, warmed if need be by a stove. The mothers should live with the babies and

take them once a day to the central camp, where the physician could see them and prescribe. Infections like measles and scarlatina were not likely to spread there, and intestinal infections would rapidly subside. Here was a new future for the summer management of the poor.

Dr. Irving M. Snow, of Buffalo, N. Y., read a paper on "Intestinal Obstruction by a Loop Formed by Meckel's Diverticulum with Ligamentous Attachment," with specimen showing a Meckel's diverticulum of twelve inches; the constricted portion was the last foot of the ileum. A boy, three years old, was the patient, and up to the present illness he was in good health. The history of the case is, that falling some little distance from some steps he struck on the abdomen to the right of the navel. He suffered no bad effects from the accident, and in an hour's time there was complete relief. He ate freely of grapes a day or so later, and it was believed that this dietetic indiscretion, by producing intestinal irritation and increased peristalsis, was the exciting cause of the obstruction. He had a normal fecal passage three days after the accident, but for four days he vomited persistently, and laxatives and enemas failed to move the bowels, which for five days were obstinately constipated. Agonizing and almost continuous abdominal pain was present, and opiates were required. There was no tenderness, induration or abdominal tumor to be felt. There was a slight distention of the belly, with a little gurgling and rumbling on palpation. The temperature was only a little above normal, and there was no fever during the entire course of the illness. The patient died inside of twelve days. The cause of death, as shown by the postmortem, was due to exhaustion and inanition from pain, vomiting and interruption of assimilation from an unrecognized abdominal obstruction. As the condition was not recognized as intestinal obstruction it was not relieved by operative treatment, hence it ended in death.

DISCUSSION.

Dr. Augustus Caillé reported a case in which the symptoms of obstruction were present, although the obstruction was not complete. Exploratory laparotomy should be made in such instances on the first occasion of fecal vomiting. The patient might have been saved by prompt surgical interference.

Dr. S. S. Adams also favored early operation, basing his remarks on a recent experience. It was well-known that usually hospital cases resulted fatally from delay. The case mentioned had the characteristic straining and screaming, but no tumor. Rectal examination proved nothing. Three drops of tincture of opium had been given, which completely narcotized the child. Next day, salt injections failing to relieve, operation was done. A profuse stool occurred while under anæsthesia, but the abdomen did not collapse. Four inches of intestine were found invaginated. The child made a complete recovery, though only five months old. Very few recovered without operation.

Dr. W. S. Christopher alluded to a case of his, of a child four months old, nursed at the breast, which suddenly showed symptoms of intussusception without cause and without fever. Blood was passed from the bowel, but there was no vomiting. There was neither tumor nor tenderness. At the operation one and a half inches of small intestine were found in the colon. Recovery was complete, the child nursing half an hour after operation, and six hours from the onset of the attack. Six months later the same symptoms occurred. The belly was again opened, and air injected with great force into the bowel. It did not budge, but this constituted a direct experiment not often possible. The invagination was reduced and the appendix removed. Recovery was complete as before. No double case has been found thus far on record.

Dr. W. L. Carr also emphasized the necessity of early operation even in the absence of symptoms. He recalled three cases during the past year without tumor, but with symptoms of ordinary colitis. One intussusception was found unexpectedly at an operation.

Dr. Irving M. Snow, closing the discussion, said it was very difficult to make a diagnosis in cases where the symptoms are obscure. An exploratory incision should be made even if there be a doubt as to the diagnosis.

Dr. B. K. Rachford, of Cincinnati, O., presented a paper entitled, "Pancreatic Digestion of Casein." His experiments consisted in collecting fresh pancreatic juice from rabbits, also bile from rabbits, and placing the same in tubes with ordinary fresh

cow's milk filtered and neutralized. These tubes were placed for five or six hours in a water bath at 38° C. Lactic acid and ammonia were used to complete coagulation of the milk, and the remainders were washed, dried, and weighed. Maltose was prepared by boiling one of the Liebig foods. As a result of these experiments it was found that maltose aided the pancreatic digestion of casein. It was found that the presence of rabbits' bile facilitated the action of pancreatic juice. It increased the diastatic action when starch accompanied the casein. Dr. Jacobi had long taught that starchy gruels aided in digestion of the milk casein. The experiment with lime-water showed that it increased proteolytic action of milk in the stomach. Lime helped the activity of the rennet. In milk feeding, lime water not only neutralized acidity, but stimulated pancreatic digestion in the intestine. Sodium bicarbonate greatly increased the proteolytic power of pancreatic juice on casein. It also neutralized the fermentative acids of milk. Hydrochloric acid was found to retard proteolytic action. Bile and hydrochloric acid caused the pancreatic juice to act with greater intensity. The intestinal contents lost their acidity at some distance from the stomach. The fact that acid so strongly aided pancreatic action should greatly influence its use in infant feeding; besides being an intestinal antiseptic it aided the pancreatic enzymes. Greasy and fatty stools came from deficient bile supply.

DISCUSSION.

Dr. Rotch stated that cereals while having no retarding action, had but slight proteolytic action, and besides called up amylolytic action. He would be against their use. He did not regard the presence of fat in the stools as abnormal.

Dr. Caillé spoke highly of hydrochloric acid, which he had used for fifteen years in all cases in which the tongue was coated, especially in children two years old or more. When the tongue became clean, the acid should be stopped and iron given.

Dr. Fruitnight gave testimony in accord with the last speaker. He esteemed hydrochloric acid highly from many years' use of it.

Dr. A. C. Cotton spoke of the fact that fat as such was rarely found in the stools. Not all light flocculent masses were fat. It could be surely recognized only by chemical analysis.

Dr. Holt had seen little efficacy from any of these drugs. He claimed more for stomach washing. The use of drugs was purely empirical. Drugs played no part if the food was proper. Proper food should be given, the stomach washed, and the child kept in the fresh air.

Dr. Blackader confessed that the use of acid was contrary to our knowledge of physiology. Washing was troublesome. Catarrhal processes were present and demanded alkalies. Acids disappointed. The society should not emphasize the use of drugs, but the broad principles of management.

Dr. Rotch noted that it was necessary to dilute cows' proteids, as they went farther than those of human milk. Drugs should seldom be used.

Dr. Rachford called attention, in closing, to the fact that this was but an announcement of experimental facts and not a treatise on treatment in general. They threw light on pancreatic juice and what influenced it. Bile with pancreatic juice emulsified fats; this was destroyed when in contact with strong alkalies and the fat was absorbed, not emulsified. Cream in the stools did not appear with its albumin and soap covering, but as butter fat. When hydrochloric acid was absent, it was needed and should be given. Clinical use in proper cases abundantly proved that it was not empirical treatment. Acid at most was an addition. It would not take the place of proper selection of food and of cleanliness.

Dr. Augustus Caillé read a paper entitled "Clinical Observations upon the Operative Treatment of Tuberculous Peritonitis." Two points were of interest, the behavior of cases before operation and their behavior after operation. The cases narrated were mostly from the babies' wards of the Post-Graduate Hospital. In all cases examinations were made of the urine, blood, fæces, and puncture fluids. As an example, he gave the case of a boy, aged six years, with abdomen swollen, tense, not painful. Fluid was present. Rectal irrigation and creosote had been used for some time. Dr. Curtis operated and found the usual pathological nodules of tuberculous infection. Two years afterward the boy was well. The general abdominal cavity had not been encroached upon. Another case was that of a boy two and a half years old, who gave a negative history except a tumor on each

side of the abdomen. These were found to be large tubercles, not adherent. No other glands were then involved. Eighteen months afterward small tumors could be felt there. In a third case, that of a girl aged five years, fluid was encysted as high as the umbilicus. At the operation adhesions and miliary tubercles were found covering the intestines. A sinus persisted for a year and closed. When it did so râles were found over the right lung. The sinus was curetted and cured and the lung also healed. She was now well. J. C——, another patient, had flatness due to a cyst, as high up as the umbilicus. It was opened and dressed with ten-per-cent. glycerin and iodoform. He was now healthy but pale. A girl, aged nine years, had pain in the abdomen for six months, with eight or ten stools each twenty-four hours. The blood and urine were normal. After two years' treatment an operation was done and disclosed adherent tuberculous peritonitis. The diarrhœa and paroxysmal pain had lasted two years. The speaker gave the following *résumé*: Diagnosis was based on pain, fluid, loss of weight, etc. Febrile rise was always found if careful observations were made. Bacilli were rarely found in fluids. The pain might be intestinal. He regularly employed the tuberculin test in human subjects. These cases showed the futility of medicine in tuberculous peritonitis. Early operation was always to be advocated. He was sceptical about complete cures.

DISCUSSION.

Dr. Fruitnight mentioned the case of a young woman, aged twenty years, with an ulcer of the palm, which the microscope showed to be tuberculous. She had also recurrent peritonitis. He thought early excision of the lump in the hand might have spared the woman the general infection.

Dr. Rotch spoke of sixteen cases of tuberculous deposits found in patients dead of diphtheria. It showed how important in every way was tuberculosis to a pediatricist; particularly, that it should be kept out of alimentary tract. If the case was one secondary to lung infection, laparotomy would do little good; if primary, it might cure. Certainly it would not give bad results. In one case followed for seven years the patient was now well. Secondary cases were the rule; hence bad results. Laparotomy was really more definite and at times less harmful

than castor oil. One should never hesitate to make an exploratory incision. The bacteriologist had not kept up with the surgeon here. Many cases that we felt uncertain about were doubtless tuberculous. Cases without effusion did well. The vast majority of abdominal tumors were tuberculous. Tuberculous mesenteric glands must be removed to prevent general infection. When the trouble was secondary to tuberculosis of the lung it was a general not an abdominal disease. He was strongly in favor of tuberculin for diagnostic purposes.

Dr. Cotton agreed that tuberculosis was paramount to any disease of childhood and very difficult to diagnose. He asked how far we could insist on an exploratory incision for diagnosis only.

Dr. Rotch replied that it should be done as a routine.

Dr. Johnston called attention to the absence of leucocytosis in differentiation from ordinary peritonitis.

Dr. A. C. Cotton, in the absence of positive clinical evidence, stated that he turned to bacteriology findings to decide the diagnosis in suspicious cases of tuberculous peritonitis. He drew attention to the limit doctors are justified in making exploratory laparotomy in such cases.

Dr. Jackson emphasized the advisability of examination of the blood for leukocytosis, but questioned whether such examination would separate the disease from typhoid fever.

In closing the discussion, Dr. Caillé did not consider medicinal treatment of any avail in these cases. He did not think it worth while to waste any time on guaiacol and creasote. He considered it the absolute duty of the operator to open the abdomen if the disease is suspected. Fluid in the abdomen may be due to a chronic muscular infection, a large spleen, anemia, nephritis, or to valvular disease of the heart. The opening of the abdomen, if the diagnosis could not be made otherwise, was harmless, as the patient, being anesthetized, suffers no pain. So far as the examination of the blood was concerned, he did not lay much stress upon it, as such an examination, he thought, would not differentiate cases of tuberculous peritonitis and every case of affection caused by chronic malaria or anemia. He admitted, however, such an examination might occasionally be useful in diagnosis.

SECOND DAY.

Dr. Edward P. Davis, of Philadelphia, presented his paper entitled, "The Treatment of Hydrocephalus by Craniectomy," and cited a case of an infant, six months old, the mother of which had two other children and was in excellent health before the birth of the present child. The birth was spontaneous, and the mother nursed the child for three weeks, at which time she was taken with what was called a "bilious attack." The secretion of milk failed and the child was fed upon starchy food.

At birth, the child weighed $5\frac{1}{2}$ pounds, and 9 pounds at six months of age. The child was restless and had a poor appetite, and it was brought for treatment. It was stupid and apparently suffered from intracranial pressure. It was seen by Dr. W. W. Keen in consultation at the Jefferson Hospital, where it was transferred and an effort made to secure continuous drainage. The fluid was difficult to withdraw from the ventricles. The child was then anesthetized, and the cranium was trephined at one side of a sagittal suture, and in the parietal bone on the right side, antiseptic precautions having first been taken. The child finally collapsed and died.

DISCUSSION.

Dr. Rotch said, so far as the operation was concerned, it appeared to be quite simple. No bad results had taken place from the operation. In the Infants' Hospital at Boston, the cases were either treated with one tapping or there was frequent drainage with tubes introduced into the ventricle, the fluid being withdrawn every day. He did not think that the operation was curative, but thought perhaps it might be palliative, the child being more comfortable for the time being.

Dr. Dorning reported a case in which two ounces of fluid were withdrawn. The child became quiet after puncture and seemed to improve for some three weeks.

Dr. Koplik reported three interesting cases, one in a baby seven months old, which developed symptoms similar to those in tuberculous syphilis. It was tapped in the first lumbar space, and from 10 cm. to 20 cm. taken according to the indications. There was a visible improvement after each tapping.

Dr. Rotch said that in the Infants' Hospital great care had

been taken to tabulate the amount of pressure under which the fluid was withdrawn, and the amount up to the time the child died. He thought it a palliative treatment.

Dr. Davis said that the danger of immediate death appeared to depend largely in this case upon the amount of fluid which was drawn. Care should be exercised in withdrawing the fluid so that very little should escape. Hence the effort to maintain pressure while the drainage was being inserted.

Dr. Roland G. Freeman, of New York, presented his paper entitled "Nephritis of Influenza in Children," and cited the case of a boy of four, who, for three years past has suffered from influenza. The ordinary symptoms of cold, prostration, fever and moderate earache accompanied the present attack in January, 1899. There was no discharge from the ear. His temperature on January 31 was 102.5°. On February 5 it reached 105°, then gradually diminished. On February 9 it varied between 100° and 101°. Some very red urine was passed on this date containing a large amount of blood—about five per cent by bulk. Dr. Freeman thought that although albumin is fairly frequent, the influenza of nephritis is a rare complication. The nephritis complicated in influenza is usually clinical, of an acute hemorrhagic type, and morphologically shows toxic lesions. The attacks occur more frequently apparently in children than in adults. Any disturbance may appear some days after the acute symptoms of influenza, and sometimes a month later.

DISCUSSION.

Dr. Fruitnight stated that he had found but one case of albumin in fifty-seven cases, and this had disappeared in a few days.

Dr. Dorning said more care should be exercised in examining the children. In his report of three cases of complicating nephritis he cited the fact that one child, nine years of age, had shown some edema of the face. Upon examination of the urine, thirty per cent of albumin and a large number of blood-casts appeared. It was three weeks before the casts and the albumin disappeared. In another child of four years, which showed edema on the face, blood-casts were found, which cleared up. The third case reported was that of a child of four years of age, with a very pronounced form of nephritis. An examination of the urine showed blood-casts, and fifty per cent of albumin.

Dr. Jennings reported one case of nephritis, following a double infection. The nephritis followed an attack of influenza, and was of a mild character. The urinary findings amounted to sixteen ounces, and its specific gravity 1.015. The urine cleared up in a very short time, and on the third day the blood-casts disappeared. For a week later, the granular casts persisted, though few in numbers. The urine increased to twenty ounces on the third day, and twenty-eight on the fifth day. The child was practically convalescent after that period.

Dr. Rotch thought these cases of nephritis and influenza are of an acute interstitial type, following the general rule of an infectious disease. A diagnosis of any special form of renal disease in young children should be made by means of an examination of the urine, and he laid stress on this point.

Dr. Carr reported a case in which the child suddenly developed a taste for sugar. The case was interesting by reason of a sudden increase in the specific gravity, the child's fondness for sugar, and the absence of albumin.

Dr. Churchill raised a question whether these cases of influenza, as well as other infectious diseases, are not often the beginning of internal disease, which developed, later on in life, particularly at puberty or later. He wanted to know whether we find such manifestations by careful and thorough examination of the urine. A case was cited of a youth of nineteen, who was suffering from an attack of appendicitis. While examining the urine, simply as routine practice, he found chronic nephritis.

Dr. Freeman stated that more than a year ago the examination of this child's kidneys had been made and that during all this time the kidneys remained perfectly right, and there had never been any deviation from the normal. There was no otitis at any time, and did not figure as a factor in the matter. The child had complained during January and December of pain in the ear at times, but it would pass off in a short time, and would not recur for a week perhaps. The cases reported were the result of an exhaustive research through the literature of ten years past.

Dr. Augustus Caillé presented a paper on "Sudden Death from Perforation of Trachea and Bursting of Caseous Gland,"

and showed a specimen which, he said, had been taken from the body of a girl. A cold abscess, about the size of a walnut, was revealed by the autopsy. This was a little above the bifurcation of the trachea. It had ruptured into the trachea, the contents being cheesy matter, which had completely flooded the trachea. This child had been sent in with a diagnosis of bronchitis. However, the house physician had heard a few rales underneath the sternum. There was no fever and no pain, and but little cough.

Dr. A. C. Cotton, of Chicago, presented a paper on "Congenital Cardiac Malformation with Endocarditis and Anuria." The family history in this case was negative, and no history of syphilis was obtainable. The baby was born March 19, 1900. It weighed at birth 7 pounds 4 ounces, and was in length $22\frac{1}{2}$ inches. It was well developed and presented no external malformations. There was a marked pallor which changed to a greenish hue, actual cyanosis supervening gradually. There was a loud, harsh diastolic murmur upon examination of the heart, which was heard all over the chest, and it was difficult to locate the exact position of this murmur. The child died of progressive asthenia on the fifth day. No urine had been secreted.

Dr. Samuel McC. Hamill, of Philadelphia, read by title a report of "A Case of Antenatal Hemorrhage into the Suprarenal Capsule and Perirenal Tissue."

Dr. A. D. Blackader presented a paper on "Enteric Fever in Childhood," based on notes taken of numerous cases both in Montreal and in his own practice. He went exhaustively into all the characteristics of the disease as manifested in these cases with the relative frequency of the various symptoms and the results obtained by treatment. He emphasized the efficiency of cold baths and the Brandt method in the treatment of typhoid fever in children; the regular and systematic employment of the cool or cold bath in the treatment was, in his opinion, of great value. He thought it might be employed regularly without too rigid adherence to the rule of Brandt, of only using it when the fever reached 102.2° . The bath was not to be employed for its effect on the temperature so much as for its effect on the nervous system and through it, on the heart, respiration and secretion, especially secretion from the kidneys.

DISCUSSION.

This paper was very thoroughly discussed, there being a difference of opinion as to the propriety of using cold baths, and whether or not infants are attacked with typhoid fever.

Dr. Samuel S. Adams took the temperature in the rectum and considered this the only safe temperature in all children under twelve years of age.

Dr. W. P. Northrup expressed the opinion that children under two years of age are little susceptible to the invasion of typhoid fever.

Dr. Griffith said, typhoid fever is of frequent occurrence in infancy. The symptoms, however, are difficult to recognize on account of the tender age of the patient.

Dr. Dorning thought there was room for discrimination in the use of water. He was impressed with the value and also with the potency for harm of hydrotherapy. He did not believe that babies stood tubing very well.

Dr. Northrup said, in 2,000 autopsies conducted on children under two years of age, he had seen typhoid fever in none. It was not his opinion that an infant under two years of age was susceptible to typhoid fever.

Dr. Blackader said he had tried to emphasize in his paper the necessity for care in each individual case.

THIRD DAY.

Dr. T. M. Rotch, of Boston, reported "A Case of Rachischisis." The condition is characterized by a deficiency of the vertebral arches either complete or partial, and is one of the principal forms of congenital defects of the spine; it is of more interest pathologically than clinically.

Dr. J. Henry Fruitnight, of New York, in his paper on "A Fatal Postotitic Cerebral Abscess, with Amnesic Aphasia," reported a case of a girl of twelve, who, in January, 1898, had suffered very severely from an acute pain of the left ear, diagnosed as otitis with an abscess. A paracentesis relieved a large amount of pus. The mother neglected to carry out the instructions, and when Dr. Fruitnight first saw the patient her temperature was about 100° and pulse 98. She complained of frontal headache. She had occasional chilly sensations and

nausea, and there was some prostration, and a scanty discharge from the left ear. The clinical diagnosis was a deep mastoid caries, possibly cerebral abscess and beginning meningitis. Violent convulsions took place December 17 and continued six hours, being finally controlled by the use of a rectal injection of chloral hydrate, inhalations of chloroform and hypodermic injections of morphin.

DISCUSSION.

Dr. Herman Knapp, of New York, who had made a clinical observation of the child, stated that if it was assumed from the symptoms, the location of the abscess would be higher up than where it was found. An operation was performed which disclosed conclusively the presence of an abscess. There was some congestion, but not sufficient to indicate the disease.

Dr. Henry Chapin, of New York, said that when a mastoid disease does not affect the brain, but burrows in front, it is always best to look in that region. He laid stress on the mastoid trouble in children in whom the brain is not affected, and in reporting the case of a boy of five, he said there was tenderness back of both ears, but no swelling. In this case the temperature fell from 103° to 101.5° and remained there for several days.

A very interesting and instructive paper was presented by Dr. W. S. Christopher, of Chicago, on the "Measurements of Chicago School Children." He used thirteen charts in illustrating the paper and showed instruments used in taking measurements. The test consisted in lifting at each alternate second with the middle finger of the right hand a weight equal to 7 per cent of the gross weight of the individual, and permitting them, at the next second, to return. Ninety seconds was the limit of the test, during which time this weight was lifted forty-five times, a metronome being used to beat the seconds. The ergogram indicated the degree of fatigue exhibited by the child during the ninety seconds. The work of the boys was better than that of the girls; the endurance of the girls up to fourteen years of age showed a greater percentage than that of the boys. The girls practically reached a maximum at fourteen, and from there on up to twenty years of age, the limit of examination did not increase. The boys, however, continued to increase continu-

ously up to twenty and the ratio of increase was greater than it had been previously. The amount of energy displayed by the girls at twenty, amounted to very little more than half of that exhibited by the boys at the same age, so marked was the differentiation in the sexes at this time. Another interesting feature of the ergographic work was in the range of possibility of the different grades. The range of ergographic endurance of children in the lower grades was comparatively slight, but increased continuously as the upper grades were reached, until, in the higher grades, the endurance of the boy pupils amounted to nearly six times that of the poorest pupils. Various tracings of ergograms were shown, illustrating the peculiarities of the tracings in different individuals. A very interesting ergogram shown was that of a sprinter who said he could run 300 yards but not 330 yards. The ergogram showed that he maintained a high degree of strength for a short time and then suddenly dropped to complete exhaustion in less time than a normal child would break. The work of Dr. W. Thompson Porter in the examination of school children in St. Louis in 1892 was confirmed by Dr. Christopher. Dr. Porter thought that physical superiority in the school children was associated with intellectual precocity and the same way with physical inferiority. It was shown, by taking the average physical measurements in each grade that the weight of a child in the second grade was less than that of a child in the third grade. In the child of twelve the highest physical measurements were noted, while a child of the same age in a lower grade showed a lower average in the physical measurements. The averages were distributed fairly in the intermediate grades.

DISCUSSION.

Dr. MacDonald, of Washington, thought that Dr. Christopher's paper contained the most important investigations on children extant. Those who undertake the work in these lines only know the amount of time required to accomplish it. Representing the Board of Education he had an opportunity of measuring some 20,000 children. Expeditions could be fitted out to the North Pole for scientific research, but objection was raised at once in the acquirement of facts about the children in such cases. This might be attributed to the lack

of practicality in the results obtained. Boys at fourteen years of age matured and were in the advance of girls. Children born in summer are stronger, healthier, and brighter than those born in winter.

Dr. Fruitnight thought that medical men should give more attention to this line of study. He thought the school child was kept at his desk when he should be at play, enjoying the sunshine and fresh air, that the time had come for reformation along this line. From 10 or 11 o'clock, he suggested, until 2 were appropriate for recreation.

Dr. Cotton felt the importance of close attention to this subject. He believed that benefits of great value would accrue to the children. He desired some light as to the period of greatest fatigue.

Dr. Christopher said there was a period of diminished endurance from the fourth to the eighth grade.

Dr. Churchill asked whether children who show the greatest amount of endurance on the ergogram stand highest in the class, to which Dr. Christopher replied that individually this had not been noted, but that he would answer the question affirmatively.

Dr. Chapin said that in the New York Juvenile Asylum 1000 children were measured with results that were somewhat peculiar; they had developed mental vices.

Dr. Rachford thought that Dr. Christopher had carried on his work under better conditions than any class with which he was familiar. He believed that the ergogram meant muscle-fatigue as well as nerve-fatigue. He thought that if the ergogram could show nervous exhaustion in the child it would be of great value. There seemed to be a trend toward precocity, that in children of a common age the child having the best physical development is farther advanced in school life than other children.

Dr. Christopher said that no attempt had been made to solve problems. At the Alcott School the average weight of a six, eight or nine-year-old child was not found to be greater or less after vacation. He stated that color blindness had been found in the schools, although the teachers had asserted there was no defect because the children were able to paint, etc. The actual test, however, showed distinct color-blindness.

Dr. Henry D. Chapin, of New York, presented a paper on

"Epidemic Paralysis in Children." He referred to the epidemic which had occurred in Poughkeepsie, in New York, and stated that in a number of children the paralysis was due to poliomyelitis. He thought some infectious agent had been at work.

Dr. Northrup, in a paper on "Atresia of the Larynx Due to Faulty Intubation" stated that in this case the fault was that of the operator. The latter was a beginner he thought. The child had pulled it out several times, twice with a string, and in that way acquired relacerations up to the number of five in all, and, at last, was not able to lift it. The larynx had been wounded by some accident and dyspnea set in and tracheotomy was required. That allowed the lacerated surface to grow together. A subsequent operation was performed, but he was not able to remove the obstruction. The child died in November.

Dr. J. Milton Miller read a paper on "Three Cases of Head-Nodding and Head-Rotation." In the case of a colored boy, five months old, breast-fed, he was first seen February 3, 1898. He had never been well, and had always been subject to gastrointestinal disorder. There was abdominal pain, vomiting and obstinate constipation since birth. The belly was protuberant and flaccid; the fontanels were large and there were no teeth. At the time of his visit to Dr. Miller the patient weighed 10 pounds and 14 ounces. Under the use of massage, salt-baths, etc., codliver oil and artificial food, he improved somewhat. On a subsequent visit, the evidence of rickets had markedly increased. The bowels were still obstinately constipated and the tongue coated. The second case was in a female child twelve months of age, breast-fed for three months, and since then on condensed milk. She was first seen at the Children's Hospital, February, 1895. She had diarrhœa and constipation alternating for many months. There was a very marked rachitic symptom, protuberant belly, wide fontanels, no teeth, enlarged epiphyses and well-defined rosary. Case three was in an infant, eight months old, seen in March, 1890, which had been fed upon condensed milk since birth. There were no teeth, very marked evidences of rickets; the tongue was coated and the child subject to attacks of diarrhœa. The mother brought the infant to the hospital because of rapid lateral movements of the head

which had existed for two months, and which were only noticed when the infant sat erect. In two of his cases the head-movements were horizontal, that is, from side to side, while in the other case they were distinctly vertical or nodding, occasionally interrupted by lateral movements with the inclination of the head to the right. He had nothing to suggest in regard to the pathology of the affection. The administration of bromids, so generally recommended, is not so necessary as diet, hygiene, etc., and the administration of drugs directed to the improvement of the general health and relief of any constitutional advice or temporary ailment from which the infant may be suffering, are all that are required.

Dr. Samuel S. Adams, of Washington, reported "Cases of Poisoning by Vapo-Cresolene," directly attributed to the fumes of a vapo-cresolene lamp. In one case he was told that the child had whooping-cough. He found it shut up in a small room and inhaling the fumes from the lamp. In another case the child, he had been told, was dying of pneumonia. He found the child with stridulous respiration and frequently crying. It was in a cold, clammy sweat, with dilated pupils. The child had bronchitis and some one recommended the use of a vapo-cresolene lamp. At twelve o'clock that night the child refused food and this seemed to be remarkable because it had been feeding pretty well. At four o'clock the child awoke, uttering a peculiar noise, and when picked up was found to be in a cold sweat. He ordered the child to be taken into another room and the windows thrown up to air the apartments. It appeared to get better, but when taken to the sick-room the symptoms reappeared, showing conclusively that the illness was due to the fumes generated by the lamp. He reported these cases for observation and thought possibly that there might be other experiences to relate in this connection.

At the business meeting held before the session opened, the following officers were elected: President, Dr. William D. Booker; Vice-President, Dr. F. A. Packard; Secretary, Dr. J. L. Morse; Treasurer, Dr. S. S. Adams; Editor of the Recorder, Dr. W. L. Carr; Member of Council, Dr. F. M. Crandall.

Place of next meeting, Niagara Falls, May 27, 28, and 29, 1901.—*The Philadelphia Medical Journal*, and *Medical Record*, May 5, 1900.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, March 13, 1900.

THE PRESIDENT, DR. ALFRED STENGEL, IN THE CHAIR.

Dr. D. J. Milton Miller presented a girl of eight years with a tuberculous cavity, and exhibited a skiagraph. For one and a half years she had had cough, fever, and progressive failure of health. There had never been hæmoptysis, but expectoration had been marked. The sputum contained tubercle bacilli. When presented there were signs of a cavity at the right apex, viz., cracked pot sound, cavernous breathing, metallic rales, and pectoriloquy. These signs were heard at the supra-spinal fossa and above and below the clavicle; they were sharply limited by the upper border of the second rib. At the left apex there was dullness, with bronchial breathing and crackling râles. The remainder of both lungs gave the signs of a general bronchitis. The skiagraph exhibited showed the above conditions fairly well.

The case seemed interesting; first, because of the comparative rarity in patients as young as the child presented of the signs of chronic ulcerative phthisis similar to those seen in the adult; second, because it seemed to be a case of direct infection. The girl's father had died of phthisis, and during his illness the patient had been his constant companion, sleeping in the same room with him. Within a year of his death the girl developed her present illness. Third, because of the rapid improvement following the child's removal from its squalid home to the hospital ward. Under the better hygienic surroundings and substantial food obtaining there, the patient had gained about eight pounds in twelve weeks, and this was in a mixed ward in which there were medical and surgical cases, where adult phthisis almost always deteriorates. The only medication had been increasing doses of creosote, of which the child was taking six drops three times a day.

Dr. Miller also presented a profoundly anæmic child of two

and a half years. The patient had been well, with the exception of measles at four months, until it was weaned at the close of the first year, since which time its present condition had gradually developed. Neither cough, vomiting, marked diarrhœa, nor other digestive derangements, had ever been present. There had been simple increasing pallor, languidness, loss of appetite, and two or three bowel movements daily. There had never been any nose bleed. The spleen, liver and lymphatic glands were not enlarged. Slight evidences of rickets were present. The teeth, all of which had emerged, were quite carious. The child urinated frequently. Examinations of the urine and blood by Dr. A. Hond, Jr., were as follows:

I. *Urine*.—Distinct albumen; sp. gr. 1010, no sugar; alkaline; bacteria; no casts. *Blood*: R. B. C., 3,984,000; W. B. C., 24,000; hæmoglobin 23 per cent. No nucleated cells, no poikilocytosis.

II (two weeks after the above). *Urine*.—Albumen, a trace; sp. gr. 1010; no sugar; alkaline; leukocytes; no casts. *Blood*: R. B. C., 3,900,000; W. B. C., 12,000; hæmoglobin, 23 per cent; no nucleated red cells; slight poikilocytosis. Differential count. Mononuclears, 34 per cent; polymorphonuclears, 43 per cent; transitionals, 6 per cent; lymphocytes, 15 per cent; eosinophiles, 2 per cent.

The blood condition, therefore, was that of a chloroanæmia with slight leukocytosis. The absence of splenic and lymphatic enlargement, of nucleated red cells and of changes in the cells themselves would remove the case from the category of the primary anæmias. The underlying cause of the anæmia is difficult to determine. The onset of the condition with weaning, the slight looseness of the bowels, the carious teeth and coated tongue, would seem to point to digestion disturbance as the primary factor, as the evidences of rickets are so slight, and there is continued absence of casts. Although the urine is slightly albuminous and the micturition so frequent, these do not seem to indicate a nephritis severe enough to produce so profound an anæmia. Future study of the case may perhaps clear up this question.

DISCUSSION.

Dr. Alfred Stengel: It has always seemed to me that the signs of cavity are among the most difficult of all physical signs of in-

terpretation in adults and certainly in children. If there is a clear depression and if the characteristic and typical physical signs of cavity, present in cases of large cavities, are found, the diagnosis is very easy; but it has always seemed to me that the diagnosis of small cavities as often made is very risky, and is perhaps made very much more often than is justified.

In the case of children I think this difficulty is heightened, because apparently physical signs of cavity are found in children when cavities are known to be absent, as Dr. Miller has pointed out with regard to pectoriloquy and in regard to the cracked pot sound. Attention has been called to the cracked pot sound over the chest of children when crying, and I have had many occasions to demonstrate this to my own satisfaction. In a child of this age and of this physique, I should doubt very much whether the sound could be obtained in that way. I should like to ask Dr. Miller whether this sign has been marked in the child exhibited. The importance of the diagnosis of a large cavity, or even of the mere existence of a cavity, at least in a child of this age is very great, because ordinarily we do not find large cavities at this age and the signs are much more difficult to interpret than in older persons.

Dr. Miller: I would like to ask Dr. Stengel if he has anything to say about the case of anemia,—whether the large percentage of mononuclear cells has any significance.

Dr. Stengel: I should think from the blood count the condition was undoubtedly secondary anæmia and the differential count, while it might incline to a possible diagnosis of rickets would have only a very slight weight in that direction. It is characteristic of the blood of childhood to find mononuclear cells increased at the expense of the polymorphonuclear and in them I do not think it points to any particular condition. It might just as well be an indication of inanition, using that term in its broadest sense, as of any disease. It is not unlikely that nephritis might be the cause, and I have seen in children nephritis with albumen and without casts confirmed post-mortem,—not interstitial, but parenchymatous nephritis.

Dr. F. S. Pearce: I think in regard to the second case, exhibited by Dr. Miller, that it is probably one of rachitic secondary anæmia. The child seems to be a typical rachitic in-

dividual. There are enlarged epiphyses of the long bones of the forearm, enlarged abdomen, beaded chest; and the general aspect of the child is that of rachitis plus anæmia. Under hygienic surroundings the child would probably get perfectly well.

Dr. Alfred Hand, Jr.: While this is possibly a case of secondary anæmia dependent upon some condition, either rickets, as Dr. Pearce suggests, or upon a gastro-intestinal condition and unhygienic surroundings, as Dr. Miller believes, we must bear in mind the result of the urinary examination and be sure that there is not a chronic interstitial nephritis. This, of course, is rare in children, but it does occur, especially where there is any hereditary influence; I believe that one case in a child under two years has been reported and other cases in children of from five to twelve years of age where there has been a distinct family history. Whether this is a congenital case or not I do not know, but the child has been through one infectious disease, diagnosed measles, which might possibly have been scarlet fever, with resultant nephritis. The persistently low specific gravity is the strongest feature, to my mind, in favor of this condition. Albumen does occur in chlorosis and in grave secondary anæmias, and usually in chlorosis the urine is light in color, but not necessarily always low in specific gravity. I have seen chronic nephritis in older children with cardiac hypertrophy and high tension pulse, the urine being always of low specific gravity. This child presents almost no symptoms, except this pallor, and yet the condition has progressed steadily. The rarity of chronic interstitial nephritis in children should not exclude it in this case.

My examinations of the patient's blood for the plasmodium of malaria were always negative.

Dr. Miller closes: In answer to Dr. Stengel's inquiry about the cracked pot sound, I thought it was present above and below the clavicle on deep percussion.

In the anæmic child the signs of rickets, I think, are slight. There is only slight rachitic rosary, and there is but slight enlargement of the epiphyses. As to the decayed teeth, we see this condition in other diseases than rickets.

I would like to call attention again to the very great improvement in this case of chronic phthisis. The child has had for

months tubercle bacilli in its sputa and a condition of hectic and sweats, and, coincident with the fever constant expectoration and no appetite. The child has gained between six and eight pounds, and that in the general ward of the hospital. The treatment has been good feeding, better surroundings and increasing doses of creosote. She is now taking six drops three times a day.

Dr. John M. Swan presented a case of chronic valvular endocarditis and acute nephritis following chorea. The patient, a girl, was eight and one-half years of age when first seen. She had been treated for arthritic symptoms in 1897, and on the first of March of the same year she developed chorea. There was soft, basic murmur at the time of the first examination after the beginning of the chorea. In June, 1898, the patient presented the symptoms of broken compensation and a mitral systolic murmur, transmitted into the axilla, a mitral diastolic murmur, not transmitted, and an aortic systolic murmur, transmitted into the carotids were heard. At that time the pulse was 142 and the respirations were 40 per minute. After a short course of treatment the patient was sent to the country, and while away from home she developed an acute nephritis that was manifested by edema of the face, hands, and the feet, by a well-marked ascites, and by 0.2 per cent albumin, and hyaline casts in the urine. There were no pleural effusions. In October, 1898, the patient had an attack of polyuria and began to improve, so that in April, 1899, she was able to be about. In February, 1900, she was attending school and doing light household duties. The murmurs of mitral regurgitation and of aortic obstruction were still present. The urine contained 3.6 per cent urea, no albumin, no casts and neither glucose, albumin, nor indican. The diastolic murmur heard during the progress of the disease had disappeared and was considered to be the diastolic murmur of mitral regurgitation. The treatment was: rest in bed, milk diet, hot bath every day, poultices over the renal region, and the use of heart tonics, diuretic and purgative. The ascites was not tapped.

Dr. S. M. Hamill: It seems to me that the murmur heard at the aortic area is the systolic murmur transmitted from the apex. The accentuation of the first sound and prolongation of the murmur lead me to suspect a mitral stenosis as well as mitral

regurgitation. At any rate, the lesion seems to me to be almost exclusively of the mitral valve.

Dr. F. A. Packard: From a superficial examination I should say that Broadbent's sign is present. I think there is a strong suspicion of pericarditis.

Dr. F. S. Pearce: An important point in this case is the old-time question of the relation of rheumatism, chorea and heart disease, and I think it demonstrates that the same autochthon may be the cause of the rheumatism, the chorea, or the heart disease. To my mind it is not at all impossible that a good many cases of chorea are due to the rheumatism affecting the serous membrane of the brain; this, in turn, irritating the motor cortex. This child had but the one attack of chorea, but has had marked rheumatic pains many times. In a good many cases of chorea which I have watched, pains have been a notable feature in the previous history. The children under treatment have entirely recovered from the rheumatic condition and thus become less liable to recurrent attacks of chorea. On the other hand, there are other cases which we cannot associate so intimately with rheumatism—where there is no history of the pain. In these recurrence of chorea appears more frequently. It is possible that the rheumatic irritant in the latter instances simply affects the serous membrane—the arachnoid. A history of rheumatism in the family frequently will aid in indicating therapeutics in the rheumatic type of the disease.

Dr. Swan closes: I feel sure that the aortic systolic murmur is the murmur of aortic obstruction. I have listened to it many times and it has been of quite different character from the murmur heard at the mitral area. It has been always transmitted into the carotids.

I want to express my thanks to Dr. Packard for suggesting the possibility of the presence of Broadbent's sign. There has never been anything in the case to suggest pericarditis to me, but pericarditis may be present.

Dr. J. H. McKee read a paper on "A Large Sarcoma of the Kidney which was Operated Upon with Operative Recovery."

DISCUSSION.

Dr. McKee: I am sorry that Dr. Morton is not here to describe the operation. An incision was made through the left

rectus muscle and this enormous mass immediately presented in the line of incision. The capsule of the tumor was densely adherent to both layers of the meso-colon. The separation proved most difficult, for there was danger of rupturing the large blood cysts which are so often found in these tumors. In spite of these, however, the operation was performed with little loss of blood, probably not more than an ounce. There was considerable shock and normal salt solution was given subcutaneously during the whole operation, and toward the end intravenous injections were given. Dr. Morton also left two or three quarts of saline solution in the abdominal cavity. Drainage was secured by counter incision in the loin. Some of the post-peritoneal glands on the left side were found to be distinctly enlarged and it was impossible to remove them.

Dr. George Walker has found in a study of 145 cases four of these children who have passed the three year limit, one of Schmidt's, two of Abbe's, and one of Israel's, Israel's patient having lived more than six years after operation. Czerny, in 1890, reported five cases that has passed the limit of five years (?). One of Abbe's two cases, that of Julia D., has been cited a great many times. One learns with regret that she has had a fatal recurrence after more than four years.

This specimen represents a decidedly rare form of tumor. Dr. Kirkbride, who has made a very careful study of it, is inclined to think it an endothelioma. There have been very few of these tumors seen; I think three in 145 cases critically examined into by Walker.

Dr. Alfred Hand, Jr., exhibited a specimen of a sarcomatous kidney, removed from a child two years old; operative recovery.

There was rapid growth with practically no family history of malignancy. When operated on the child was 22 months old. It had been in the Children's Hospital about four months previously with conjunctivitis. It had seemed in perfect health and had gone out, but came back to the dispensary in July, the mother having noticed a few days before a lump in the left side. Dullness was continuous with that of the spleen. The blood examination was negative, as was the urine examination. The parents objected to operation, until the rapid growth showed them that nothing else could be done. After the abdomen was

opened the child was in such a bad way that Dr. Wharton was about to abandon the operation, when the upper part of the tumor ruptured, necessitating the finishing of the operation. The child recovered and left the hospital in a month in good health. The specimen shows that the sarcoma is within the capsule of the kidney, involving the upper part almost entirely. The remaining kidney structure is atrophied and cystic.

I have since looked up the address of the family and found that the parents had been to the Hospital to get a death certificate as there had been recurrence, with death six months after the operation.

It is my opinion, as a medical man, that operation in these cases is not only justifiable, but advisable. Even if we feel that the child is going to die, or have recurrence probably inside of the three year limit, we give the child a period of life with comfort and there is the possibility that in that time some one might discover by accident or design some prevention for metastasis.

AMERICAN MEDICAL ASSOCIATION.

SECTION ON DISEASES OF CHILDREN.

Edwin Rosenthal, Philadelphia, Chairman; Louis Fischer, New York, Secretary; Executive Committee: A. C. Cotton, Chicago, Ills.; J. P. Crozer Griffith, Philadelphia; H. E. Tuley, Louisville. Annual meeting at Atlantic City, N. J., June 5-8, 1900.

PRELIMINARY PROGRAM.

Address of the Chairman.

SESSION DEVOTED TO THE CONSIDERATION OF SCHOOL CHILDREN.

E. Stuver, Fort Collins, Colo., "Symmetrical Development; or, Does our Present School System Develop the Highest Powers of the Child?"

J. Henry Bartlett, Superintendent of the Friends' Select School, Philadelphia, "School Break-Downs."

Thomas H. Fenton, Philadelphia, "Eye Strain."

Louis J. Lautenbach, Philadelphia, "The Care of the Ear in School Children."

A. D. Rosenthal, D.D.S., New York City. "The Neglect of Teeth in Children."

Grace E. Spiegle, Philadelphia, "The Physician's Responsibility in the Physical Education of School Children." Summary: Medical Inspection of School Children, Its Purpose, Its Results. Health Supervision of School Children. Attitude of Family Physician toward the School Authorities, Teachers, Parents and Child.

Discussion of the above by Drs. F. K. Dercum, C. F. Wahrer, and others.

SESSION DEVOTED TO THE CONSIDERATION OF CONTAGIOUS
DISEASES.

C. F. Wahrer, Fort Madison, Ia., "Shall Children be Kept from Measles, and the Exanthemata Usually Incident to Children."

Henry Koplik, New York City, "Roetheln, a Distinct Affection Apart from Measles and Scarlatina, and Its Differentiation from these Exanthemata."

Jay F. Schamberg, Philadelphia, "A Clinical and Pathological Study of the Rash of Scarlet Fever, with Especial Reference to the Origin and Character of the Desquamation."

A. S. Daniel, New York, "Differential Diagnosis Between the Eruptions of Influenza and those of Other Infectious Diseases of Childhood."

John Lovett Morse, Boston, Mass., "Fetal and Infantile Typhoid."

Joseph Trumpp, Munich, "Decubitus following Intubation."

Janos Bokay, Budapest, read by Alexander Klein, Philadelphia, "Resulting Injuries due to Extubation."

Dr. Charles W. Hooper, Philadelphia, "Treatment of Ear Complications in Measles, Scarlet Fever and Diphtheria."

Discussions by William M. Welch, W. C. Hallowell, S. Solis Cohen, Philadelphia; Louis Fischer, New York, Wm. P. Northrup and others.

SESSION DEVOTED TO THE CONSIDERATION OF THE FEEBLE-MINDED, AND TO NERVOUS DISEASES.

Martin W. Barr, Elwyn, Pa., Pennsylvania Training School for Feeble-Minded, "The Etiology of Idiocy and Imbecility."

S. J. Fort, Ellicott City, Md., "The Physiological Method of Training the Feeble-Minded."

A. W. Wilmarth, Wisconsin Home for Feeble-Minded, Chippewa Falls, Wis., "The Care of the Higher Grades of the Feeble-Minded."

J. Madison Taylor, Philadelphia, Pa., and F. Savery Pearce, M.D., "A Study of the Circulation in the Feeble-Minded."

William M. Leszynsky, New York, "Common Forms of Paralysis in Children."

Discussion by H. N. Moyer, Chicago; Louis Faugeres Bishop, New York; F. K. Dercum, Philadelphia; J. P. Crozer Griffith, and others.

SESSION DEVOTED TO THE CONSIDERATION OF THE BLOOD AND THE CIRCULATION.

Henry E. Tuley, Louisville, Ky., "Purpura Hæmorrhagica or Scorbutus—A Clinical Sketch."

Samuel E. Woody, Louisville, Ky., "Rheumatism."

J. Clements, Kansas City, Mo., "Chorea."

Gustavus M. Bloch, Chicago, Ill., "Medicinal and Surgical Treatment of so-called Scrofula."

John A. Robison, Chicago, Ill., "The Essential Points in the Treatment of the Adolescent and Senile Heart."

Henry Illoway, New York, "Abortive Treatment of Pneumonia."

Dr. Fred. Packard, Philadelphia, "The Antecedents of Valvular Heart Lesions in Children."

Dr. Leopold F. Haas, New York City, "Report to two cases of Diabetes in Children."

Dr. Julian Brandeis, New York City, "Value of Blood Examinations in Children."

Discussion opened by Alfred Stengel, Philadelphia; S. Solis-Cohen, Philadelphia; Edwin E. Graham and S. S. Adams, Washington, D. C.

SESSION DEVOTED TO THE CONSIDERATION OF INFANT FEEDING
AND TO DISEASES OF THE DIGESTIVE TRACT.

Adolph Baginsky, Berlin, "The Milk-Supply," etc.

Alexander McAlister, Camden, N. J., "Infant Feeding."

Discussion will be opened by Henry D. Chapin, New York, and Victor C. Vaughan.

Edward H. Small, Pittsburg, Pa., "Gastro-Intestinal Hemorrhage in the New-Born."

Joseph N. Byrne, New York, "Causative Relative Frequency of Typhlitis, Perityphlitis, and Appendicitis in Infancy and Childhood."

S. Weis, Vienna, "Statistics on Intussusception in Children."

Discussion by Frederick Packard, Philadelphia.

Thomas Charles Martin, Cleveland, Ohio, "Congenital Malformation of the Rectum. A Case of Maternal Impression."

SESSION DEVOTED TO SURGICAL SUBJECTS.

Isaac Abt, Chicago, Ill., "Movable Kidney (Floating Kidney) in Children."

Thomas H. Manley, New York City, "Symptomatology of Appendicular Inflammation in Children."

John S. Miller, New York City, "Normal Salt Transfusion in the New-Born for Hemorrhage from the Cord."

Edward A. Tracy, South Boston, Mass., "Some Joint Diseases in Children; their Diagnosis and Treatment."

Louis Fischer, New York City, "Athrepsia Infantum; Diagnosis and Treatment."

Dr. F. C. Valentine, N. Y., "Surgical Circumcision."

Dr. Emil Mayer, New York City, "A case of Empyema of Antrum of Highmore in a Child."

Papers and Discussion have been promised by Drs. I. N. Love, St. Louis, Mo.; A. C. Cotton, Chicago, Ill.; W. S. Christophery, Chicago, Ill.; John S. Musser, Philadelphia, and others.

The chairman of the Section announces that many visitors will be present, and amongst the guests Dr. Abraham Jacobi has accepted the invitation.

REVIEW OF PEDIATRY.

CANCER OF THE STOMACH IN CHILDHOOD.

Drs. OSLER and McRAE, of Baltimore, having made a careful study of the literature of this subject, state that "The extreme rarity of gastric cancer at this period is shown by the fact that there are only six cases on record below the age of ten years. The literature contains so many allusions to cases without a definite reference that there may be other instances than those here referred to. The same may be said of the cases between ten and twenty years of age. The reported cases in childhood have been subjected to criticism, and none can be positively accepted as arising after birth. It may be noted that Steiner and Neureutter failed to find this condition among two thousand autopsies on children, although it was specially looked for.

"The cases below the age of six years are as follows:

1. *Thomas Williamson's case.* It is curious to find that in nearly all the references to this case it is spoken of as 'Wilkinson's.' So often is this repeated that a reference to this case as 'Williamson's' by Le Vaillant was at first thought to apply to another case. This was in an infant apparently healthy at birth. In a few days vomiting and emaciation began. These continued and death occurred at the end of five weeks. At autopsy, the pylorus was found to be hard and indurated, with the orifice so contracted as scarcely to admit a probe. The mucous coat was slightly thickened, while scarcely a trace of the muscular tunic was observable. The submucous tissue was much hypertrophied and indurated; it seemed to be the only tissue between the mucous and serous coats. There is no note regarding the histological character of the growth. Doubt is expressed whether this was a case of cancer or of simple hypertrophy.

2. *Cullingworth's case* was in an infant. Vomiting began when the child was ten days old. This, with constipation and emaciation, continued for twenty-nine days until death. Autopsy showed a much-dilated stomach nearly filling the ab-

dominal cavity. The wall was hypertrophied, especially toward the pylorus, from the surface of which a small pear-shaped tumor an inch long arose. This was soft and ulcerating. It completely filled the pyloric orifice. The growth was examined by Dreschfield and proved to be a cylinder-celled epithelioma. Welch considers that the tumor was probably congenital.

3. *Kaulich's case* was in a child aged a year and a half, with an abdominal tumor, but whether primary or secondary in the stomach is not positively known.

4. *Kuhn's case*. This is referred to by Williams, who considers it to be probably adeno-carcinoma of congenital origin.

5. *Widerhofer's case* was in an infant sixteen days old, and was possibly secondary in the stomach.

6. *Ashby and Wright's case* was in a child aged eight years, who was admitted to the hospital complaining of distention of the abdomen. There was neither vomiting, tumor, nor tenderness. Some months later there was tenderness, and a tumor was felt to the right of the navel. Pain was present. Death followed rapidly. Autopsy showed the duodenum, transverse colon, and stomach matted together. The stomach was dilated, its walls thickened, and the pylorus just admitted the forefinger. On the cardiac side of the pylorus were two small growths the size of peas, and on the duodenal side there was an irregular cavity, the walls having been destroyed by new growth.

Microscopical examination showed the growth to be columnar epithelioma. From the description it would be difficult to say positively that the growth was primary in the stomach.

Some resemblance to malignant disease of the stomach is borne by hypertrophy of the pylorus in infants, an affection which Thomson, of Edinburgh, has studied with special care. As already noted, Williamson's case is thought by many writers to have been simple hypertrophy. The course may be rapid and simulate malignant disease, as in a case reported by Pitt, in which death occurred in seven weeks following continuous vomiting and emaciation. Rolleston and Hayne have reviewed the reported cases, seventeen in number. An interesting case is reported by Batten, at the age of eleven weeks, in which the stomach peristalsis was visible and the pylorus could be felt.

Under careful feeding the child improved for some months, subsequently dying from broncho-pneumonia. Autopsy verified the diagnosis."—*New York Medical Journal*, Vol. 71, No. 16.

CRIME TO FEED BABIES SOLID FOOD IN FRANCE.

A law has been passed forbidding any one to give solid food of any kind to infants, in France. Owing to its low and rapidly declining birth rate, France is awakening to the fact that she must take care of her babies. So low has the birth rate become that it means an annual loss of twenty thousand population. Since 1891 the deaths in France have exceeded the birth-rate, which is now only twenty-two to each one thousand population. France's hope for continuance of a nation is in preserving the lives of as many children as possible. The system of milk inspection, on which the welfare of thousands of children depends, has been made thorough and effective. The most arbitrary power is exercised in the supervision of contagious diseases. The use of long rubber tubes with feeding bottles is prohibited, because of the difficulty in keeping them sterilized. And now the persons who give solid food to a child less than one year old, unless it be upon special prescription of a physician, may be adjudged of an attempt to kill.

It should be added that the French Academy of Medicine has urged the administration of the *Galegas* (*nutrolactis*) to nursing women.

INFANT FEEDING.

It is quite safe to predict that an infant, if it has the breast only once or twice in the course of twenty-four hours, will thrive on the bottle much better than on the bottle alone. It is not advisable to deprive the infant of the mother's breast, no matter how scant the secretion of the breast may be. It is very difficult to decide how much cows' milk should be given such infants, because it is impracticable to measure the amount of milk secreted by the breast in question. An observant mother and physician will soon find out, however, how much additional milk should be given in any case.—*The Public Health Journal*, March, 1900.

BOOK REVIEWS.

LOVE AND ITS AFFINITIES. By George L. Butler, M.D. Published by G. P. Engelhard & Company, 358 Dearborn Street, Chicago. 1899.

It is very much of a surprise to us to receive a book of this character, or rather on such a subject, from the pen of the well known author of Butler's *Materia Medica*. Love is not often studied as a scientific subject, nor are we inclined to associate "Lust, Love and Religion." The author has very carefully worked out his theme along ethical and moral lines, and while necessarily touching upon the baser passions, leads the mind of the thoughtful reader steadily on to the higher levels. The quotations from the world's best literature are very well chosen and aptly cited, and make of the little volume a very beautiful collection of love poems.

De La Gastro-Entérite Aiguë des Nomrissons. By A. Lesage. Published by Masson et Cie, 120 Boulevard Saint Germain, Paris. Price 1 fr. 25. 1899.

This little pamphlet is number 17 in a series of clinical monographs upon the latest subjects in medicine, surgery and biology. It is a study of the etiology and pathogenesis of the digestive infections and intoxications of young children. As physicians, we are frequently puzzled to know why some foods are digested and others not, and why sometimes the same food, before agreeing all right, is found to be the cause of great digestive disturbances. The author has made a careful study of French and German investigations and has himself verified their results.

He shows clearly just what microbes are responsible and thereby indicates how the disease may be avoided.

TRANSACTIONS OF THE MAINE MEDICAL ASSOCIATION, 1899. Dr. Charles D. Smith of Portland, Me., Secretary.

Three of these papers have been already published in our pages. Others which deserve special mention are the annual oration by Dr. Maurice H. Richardson on "Acute Abdominal Symptoms Demanding Immediate Surgical Intervention," "A Series of Seven Minute Papers on Diphtheria," "Conservative

Gynecology," "The Vaginal versus the Abdominal Route in Pelvic Surgery," and "Thirty Appendectomies with Histories of the Cases and Exhibition of the Appendices."

There were many other good papers but these are the ones which fall specially within our lines. The meetings cover morning, afternoon and evening sessions on two days in June, and in spite of the fact that there is no banquet, a good attendance is secured. We notice, however, that next year something in the social line is to be provided for.

"Transactions of the American Gynecological Society." Volume 24. For the year 1899.

This is a résumé of the best work done and the results of the more careful study of the foremost students of the Diseases of Women in America today. Such men as Noble, Pryor, Vineberg, Kelly, Byford, Smith, Goffe, Reynolds and Bovée are everywhere honored as leaders in their line of work. We need not specify the subjects on which they wrote. Our issue of June, 1899, contains abstracts of many of them, much more satisfactory than our space here will permit.

A TEXT-BOOK OF PATHOLOGY. By Alfred Stengel, M.D., Philadelphia, 1898. W. B. Saunders, Publisher. Price, \$4.00.

By some oversight the notice of this excellent book has not appeared in the "Annals" until at present. The book is written in a most practical way and not much space is devoted to the technique of pathology as the author has seen fit to leave this part to more special works on the subject, a point which we highly commend.

The volume is very nicely and fully illustrated, and is very complete. It is divided into two sections, the first of which treats general pathology, while the second is devoted to special pathology. An excellent index is placed at the end of the book. As an elementary treatise on the subject it will be found superior to any other that has as yet been published.

"Essentials of Surgery." By Edwin Martin, A.M., M.D.; illustrated. Seventh Edition, revised and enlarged. Published by W. B. Saunders, 925 Walnut Street, Philadelphia, 1900. Price, \$1.00 net.

This is a most useful little volume, numbered No. 2 of Saunders's Question-Compounds. Arranged in the form of question and answer is a vast deal of information on Surgical matters,

including many prescriptions and practical directions for the preparation and application of dressings, bandages, solutions, etc. The largest single addition is a section on the modern treatment of appendicitis. The many excellent illustrations add much to the success of the volume as an aid to students.

"Healthy Exercise"—in Three Parts. By Robert H. Greene, M.D.; illustrated. Published by Harper & Brothers, New York City, 1900. Price, \$1.00.

Part I. treats of the theory of exercise, baths and bathing; Part II. of the choice of an exercise, and Part III. describes the exercises themselves.

The value of physical training and careful personal hygiene as a means of preventing disease are well presented. As physicians we have often to give the advice "you must take more exercise," and too often we leave it to the patient to choose the form, forgetting that the form chosen may not be at all adapted to the relief of the condition. The author clearly declares and proves the best forms of exercise for various diseased conditions and more than that, describes just how they should be practised. Hence the book fills a place in every physician's library, which no other book or series of lectures does fill. However, not the least value of the book is in the good advice which the busy professional man may take to himself in order to avoid the fatal illness which carries off so many of our medical men before their time.

"Transactions of the New York Obstetrical Society from Oct., 1898 to Oct., 1899, with Complete Index." New York, 1899.

The transactions of this society, a record of which we have recently secured for publication each month in our own journal are well worth preservation. Gynecological surgery and abdominal surgery as well as obstetrics form the basis for many excellent papers. The recording secretary of the society is Joseph Brettaner, M.D.

"Manual of Massotherapy." By W. E. Forest, B.S., M.D. Published by The Health-Culture Co., 503 Fifth Avenue, New York City. Price, in paper covers. 25 cents.

This pamphlet describes the methods of application of muscle rollers which the author claims may take the place of massage

in cases where an expert masseuse cannot be obtained. We cannot vouch for the success of this method, but the author seems to know his subject and pleads his cause well.

"The Nervous System of the Child, its Growth and Health in Education." By Francis Warner, M.D. Published by The Macmillan Company, New York City, 1900.

This volume is similar in style, size, printing, etc., to "The Study of Children" by the same author, which we reviewed in these columns two or three years ago. That book treated at length of the best methods to be employed in the study of children. This one presents the results of such study, in more or less the style of a clinical lecture. The book is directed specially to teachers but the increasing number of physicians who are becoming interested in the education of children will find in it much of value and helpfulness.

The child is followed from birth on through school. The appearance and the evolution of his brain power, the physical care necessary for its best development, the value of physical training, the methods which may be termed "mental hygiene" and the scientific consideration of nerve centres, these are among the subjects which Dr. Warner considers in very interesting chapters. If you have the former book you will wish this one. If you are interested in this line of work and have neither of them, you will order them both.

"Home Nursing." By Eveleen Harrison. Published by the Macmillan Company, New York City, 1900.

In this attractive and useful little volume the author has gathered the best teachings of the modern scientific methods of the care of the sick. The general practitioner has often cases which need a trained nurse's care but can not have it. If he can but place a copy of this book in the hands of the one who must do the nursing, he may be assured of good care and be much relieved of the little details, so necessary to the welfare of the patient, but so difficult for the physician to keep in mind.

Beginning with the more general considerations of room, ventilation, temperature, etc., the author considers in regular order the more specific diseases and symptoms and the most important emergencies. The purpose is not to replace the physician but to aid him. A number of recipes and diet lists and suggestions as to dainty service, etc., are among the other valuable elements of the book. We believe the volume deserves a wide circulation in which, as physicians, we may wisely assist.

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ORIGINAL COMMUNICATIONS

RELATIVE VALUE OF VAGINAL AND ABDOMINAL OPERATIONS IN EXTIRPATION OF THE PELVIC ORGANS.*

PROF. L. GUSTAVE RICHELOT.

It would have given me great pleasure to comply with the courteous invitation of Prof. Englemann, and to be present at the meeting of the American Gynecological Society. Prevented by my duties from leaving France, I desire to show to my American colleagues how much interest I take in their work, by sending them a succinct résumé of the ideas which I should have set forth before them, and which my erudite friend, Englemann, had invited me to submit to their discussion.

This work is only a very summary view of a vast question, of which I have had occasion to treat many times, and in various memoirs presented to the Surgical Society or in the last congresses: *the relative value of vaginal and abdominal operations in extirpation of the pelvic organs.*

I would like to establish, in a few words, where we stand, and what seems to be the opinion today, as far as I know, of surgeons whose education is complete, and whose technique is perfected concerning the operations directed against *fibroma, cancer of the uterus and pelvic suppuration.*

It is in France that the vaginal method was born; it is in

* Read by title at the Meeting of the American Gynecological Society held in Washington, D. C., May 1-3, 1900.

France that it has its warmest partisans. But, since the recent progress of laparotomy, the new current sweeps many young operators towards the abdominal method. Curiously enough, it is in Germany that vaginal hysterectomy is today supported by names of authority, which appear to become more numerous. America says nothing. I am one of those who, while receiving with favor all improvements of technique, think that we ought not to abandon a method which gives us such precious resources and such incontestable success.

FIBROMATA.

It is certainly in cases of fibroma that the supra-pubic method has gained the most ground in the last few years; and it is for fibromata that vaginal hysterectomy can no longer claim the superiority that it formerly had.

Nevertheless, let us not be unjust. Vaginal hysterectomy remains still a happy operation, without painful consequences and without mortality, for all the tumors which are suitable for it in volume and disposition. To say that it is an operation without mortality, may seem paradoxical; but, in fact, I can recall one or two operative faults which I have committed, two or three cases of infection after simple operations, at certain times when the asepsis of my service was not perfect; otherwise I have seen all the fibromata which by the help of morcellation could pass through the pelvic canal, removed with the greatest safety; all the operations were extremely benign, even when by some rare exception they lasted two hours; all the patients were without fever, without shock, with smiling faces and quiet on the second day; I have seen the clamps which were left on, particularly in cases of fibromata, admirably endured, without complaints and without pains.

But, to obtain such results, it is necessary to be prudent, and some over-reach the mark, in attacking by this route too voluminous tumors; they had mediocre results. The vaginal route only deserves our preference in conditions where experience has shown us that it is efficacious and benign. If the volume of the fibromata, their number, their development above the superior

strait, their extension towards the iliac fossæ multiply the sources of danger, it ceases to be the marvelous operation which has captivated us and carried us away. Why should one be so eager to morcellate tumors which are too large or too badly situated? Those who have gone too far on this road have a mortality that vaginal hysterectomy does not merit, and which, for my part, I have never known.

I feel honored to stand among those who have always defended, modified and improved abdominal hysterectomy, up to the time when our common effort has made it what it is today. American surgery has a glorious part in its progress; and this progress is such that the only question now left is to find out which of the two methods is the more benign; it is only a question of allotting to each one the tumors which are suited for it. The umbilicus cannot serve absolutely to mark the separation; the conditions of the fibromata are more important than their volume; experience, the surgical sense, will always be the best judges. One thing is certain; today I am much more ready than formerly to choose the suprapubic method, because I know that it offers me the same security as the vaginal one. Some cases remain more severe; but, by the vagina, they would be inoperable. I have made, during the last year and this year, forty abdominal hysterectomies for fibromata, uncomplicated, or with pelvic suppuration, complicated by cysts included in the broad ligament, filling the lower segment, etc.; I have lost two patients, out of these exceptionally difficult cases, and these two cases already seem far off, so entirely do the last hesitations of operative manipulation fade away and disappear.

CANCER OF THE UTERUS.

The authors who are now attacking vaginal hysterectomy when employed for uterine cancer are not doing it justice, and, in undertaking to do better by the abdominal route, they are pursuing a chimera.

The total extirpation of the uterus through the vagina is rational and preferable to simple amputation of the cervix, at the same time that it is modest and recognizes the limits which

are imposed on it by the force of circumstances. It promises durable success in cases where scattered cancerous cells, passing beyond the uterine tissue may have emigrated towards the pelvic cavity and would be likely to remain quiet there for a long time (prolonged latency), and also whenever we have the chance to intervene before the lymphatic vessels have carried any germ of proliferation outside of the uterus (definite cures?). But the cancers of the cervix do not all have a very rapid evolution, and those of the corpus, for some unknown reason, always leave us quite a long respite.

The operation is *benign*. It is not necessary to spend time over the statistics of surgeons who do not understand it. For my part I have 100 operations with six deaths; and this last figure does represent the real gravity of colpo-hysterectomy, it recalls to me, especially, errors of diagnosis and patients operated on under bad conditions. These cases are unimportant in comparison with the marvelous simplicity, and the almost certain success, of all the operations which are performed on well circumscribed tumors and entirely movable uteri, the only ones in which we ought to count on having satisfactory results.

Vaginal hysterectomy has proved itself *efficacious*. One of my earliest patients has lived twelve years and died of cerebral hemorrhage; another is still in good health, having been cured for twelve and a half years. The following ones, whom I have always under observation and who remain without recurrence, have, since the operation, ten, nine, eight, six, four, three and one-half, and three years; I do not count the more recent ones. I have lost from observation those who were in good health after five, four and a quarter, four years, three years ten months, three years and a half. To deny the prolonged cures and the benefits of vaginal hysterectomy in cases of typical cancer, clearly demonstrated by clinical history and by microscopic examinations, is to deny evidence. As I am able to cite at least 18 patients out of 100 to whom I have given great benefits, and of whom many seemed definitely cured, I say that our former expectations were legitimate, and only those who have dreamed of the impossible can consider themselves disillusionized.

Let us now consider what the abdominal route promises us.

I will not count the surgeons who have claimed to remove, by this route, cancers which are manifestly invading other tissues, and I examine only abdominal hysterectomy as applied to clearly circumscribed cases, adding thereto "the emptying of the pelvis," that is to say the search for glands and the removal of some pieces of cellular tissue. If we reflect a little, and look into the matter a little, we can scarcely understand how surgeons can dream of a complete dissection of the contaminated tissues. The comparison with cancer of the breast is but specious. The axillary ganglia are collected in bunches, surrounded by an adipose mass which is easily detached; it is permissible to cut widely, deeply, and to remove in mass the skin, the fat, the aponeurosis, even the muscles, without having to be careful of organs or encountering any dangers. But in the pelvic cavity? What does it signify to expose the ureter, as if we could really strip it, destroy the last supporting fibres of connective tissue, follow on the trail of the cancerous cells along the iliac artery? The glands are only relays on the march of the infection; what good does it do to remove some of them? Until now I only find authors who report recurrences, and others who form beautiful projects for the future. If I consider the facts the patients are dead, or about to die, or it is too soon after the operation to know what to expect. Thus the pursuit of the cancerous invasion throughout the minor pelvis seems to me an illusion.

To form a proper opinion on the question it must be remembered that uterine cancer passes through two periods; that it remains restricted to the uterus before invading neighboring regions, and that the duration of these two periods is very variable and dependent on unknown conditions, doubtless on the influence of the "morbid temperament." It is very striking how absolutely different may be the appearances in cases of two cancers having the same structure and the same location in women of similar ages, and this without any apparent reason. Under these circumstances what is our objective and what can we claim?

The objective which we dream of is intervention during the first period, before the least cancerous cell may have wandered

outside of the uterus. Such was the idea which inspired us, fifteen years ago, when we brought out vaginal hysterectomy; to forestall the invasion and not to pursue it. Such is still today the veritable treatment of the uterine cancer. Outside of this everything is precarious, uncertain, or condemned in advance; and this is why I am a decided partisan of vaginal hysterectomy.

Nevertheless it would be going too far to refuse, in certain cases, the advantages which we can gain from the perfection of the technique of abdominal hysterectomy. These cases are rare, and very difficult to determine, being those where the cancer has a slow progress, where invasion of adjacent parts, an infection of the tissues, by continuity, preponderates over the invasion of the lymphatics and the transportation of cells to a distance. It is permissible to adopt the abdominal route in presence of a direct invasion, which seems to be limited to the cul-de-sac of the vagina, and excludes the idea of a veritable diffusion of cancer. But it is well to proceed on this road with the greatest caution, independently of having numerous mishaps.

PELVIC SUPPURATIONS.

In cases of pelvic suppuration we are all agreed today on the conditions which require us to choose the abdominal incision; hesitation in diagnosis, doubt whether the lesion is bilateral in young women, hope for preserving organs. But whenever the surgeon does not have to obey considerations of this kind, vaginal hysterectomy is the method of choice.

The regular success of vaginal hysterectomy in the hands of those who have learned it well cannot leave the shadow of a doubt. And the relative benignity of the operation is due to the facilities which it gives for avoiding two dangers: the contamination of the peritoneum, and the wounding of the small intestine; so that very virulent pus and dense adhesions are no longer a stumbling block. The foci are opened methodically at their lowest parts, the pus runs immediately to the exterior; the fingers passing behind the tube draw it from above downwards, and the drops of pus only touch the vaginal incision

which will be immediately washed, and separated from the serous membrane by the final tamponade. As for dangerous adhesions, they are quickly recognized by the fixity of the purulent pockets; there is no struggle with the small intestine, which protects itself, and which is not seen; a simple opening, washing out and tamponade of the cavity.

For here we are not forced, as in the supra-pubic operations, to extirpate the whole of the organs in order to have a good result. Doubtless we ought to try for complete extirpation, which can usually be accomplished; nevertheless, perfect cure is not dependent on the complete ablation of the appendages. In nearly 800 vaginal hysterectomies I have only five times seen, after incomplete extirpation, a suppuration, which was light and hardly inconvenient, retarding cicatrization, and these five patients, themselves, recovered like the others; the remote results have been the same. The nervous patients who suffer after operations are recruited in as large proportions among those who no longer have any appendages, as I have often determined by counting.

The immediate gravity of laparotomy is closely dependent on the quality of the pus; in some cases the pus is sterile or little septic, in others it is extremely virulent. With the first kind, long series of successful operations can be made; but it must be remembered that in certain laparotomies the operator is disarmed. It is difficult to know exactly the truth; by the side of the beautiful statistics there are series of operations of which nobody speaks, of patients of whom all trace is lost. An honorable man may always affirm, without falsehood, that his method gives him good results; the notion of what is good is entirely relative.

I know very well that laparotomy has advanced greatly during the last few years; that the Trendelenburg position has given new facility to the operative technique; that the American procedures and total abdominal castration have singularly improved the immediate results, and at the same time have made the remote results more valuable; in short, that the supra-pubic method has been able to preserve its position and has made, on the whole, an excellent showing in comparison

with its rival. Nevertheless, and in spite of all the improvements, I repeat that certain forms of pus of extreme virulence are the source of danger in operations by the upper method, and that in the same cases, with identical pus the vaginal hysterectomy does wonders. What a difference there is between the puncture of pus tubes through the abdominal wound, and their incision by the other way! How insufficient and precarious is the aspiration of pus during a laparotomy! And how the surgeon is master of the situation when placing sponges to protect the vaginal wound behind the purulent pocket, he opens it widely to the exterior by a free incision, then with his fingers curved around it he enucleates it and draws it towards him! And what a difference in the convalescence of certain patients.

After a dangerous laparotomy, temperature, tympanites, bad pulse, peritoneal facies, anguish of the surgeon, and great consumption of artificial serum; after a vaginal hysterectomy, where a fetid pus has inundated the uterus, the vagina and the fingers of the operator, indifference of the peritoneum and perfect calm. Unfortunately, the superiority of vaginal hysterectomy cannot be computed with figures, because it is impossible to compare the operators with each other; only a surgeon who understands very well both methods, and practices them with the same dexterity, can have a good idea of their relative value. Nothing is more easy, to be sure, then to perform a vaginal hysterectomy as badly as the worst laparotomy, nothing is more easy than to open the purulent pocket right into the peritoneal cavity. But there is a manner of "finding the joint," to draw the annexes outside while protecting the peritoneum. There is a way of making the hemostasis complete and absolute; of avoiding a whole series of accidents which authors enumerate complacently and which are not in the programme of the operation; of economising finally quarts of artificial serum. And, moreover, there is consecutive care, the importance of which is capital; how to place the tampons in the wound, what day to remove them, when and how to give the first injection. All these details if better observed and better understood, would make us agree on the value and the results of vaginal hysterectomy.

There are too many surgeons whose practice is unchangeable

and all of one pattern. Doubtless we must admit, here as elsewhere, individual aptitudes and inclinations; but in reality none of us has the right to have an incomplete education. The surest method of obtaining a good result is to know equally well all the roads which lead to pelvic lesions, and to choose one or an other way of approaching them, following precise indications, and not because we find one easier. Vaginal hysterectomy is from this point of view, and on condition that it is performed by one who knows how to do it, a method of the first rank.

CONCLUSIONS.

1st. In uterine fibromas, the two methods abdominal and vaginal have an equal value; each one has its indications, but the upper route is the most often indicated, and vaginal hysterectomy can no longer, to-day, claim the same superiority as formerly.

2nd. In cancer of the uterus, vaginal hysterectomy is superior to every other method; it permits us to obtain, in a proportion of not less than 10 per cent., prolonged survival, and even cures which seem to be final. The best operation is that which precedes cancerous infiltration, and not that which pretends to pursue it through the pelvic cavity. Abdominal hysterectomy is an extra resource in a very limited number of cases, but, applied deliberately to invading cancers, it is an imprudence, and for limited cancers it is an illusion.

3rd. In pelvic suppurations the conduct to be used is variable and responds to complex indications; improvements of technique have given a great value to the supra-pubic method which ought to be preferred in certain cases. But most frequently, when the surgeon is sure of his diagnosis, if he wishes to give his patient the greatest security and the least suffering, vaginal hysterectomy is the method of election.

Paris, France.

TUMORS COMPLICATING PREGNANCY WITH
REPORTS OF CASES.*

GEO. W. JARMAN, M. D.

Mr. President and Fellows:—I make no excuses in presenting to you for your consideration this subject, for, although it has been a much written and discussed one, it still remains one of great interest to both the obstetrician and gynecologist, causing no end of anxiety to the one, and demanding the most painstaking diagnostic skill of the other, both as regards the character of the complication and also the best mode of procedure in a given case.

I submit to you the histories of the following cases, representing the most usual tumors complicating pregnancy.

Case I. Mrs. V., 27 years old, the mother of one child, three years of age, consulted me as to the date of her confinement. She stated that her menstruation had always been regular until eleven months previous, and that four months after its cessation she consulted her physician who informed her that she was pregnant.

Her abdomen had increased in size, she thought that she had felt life as with her first child, and she now sought to know the causes of the delay in her confinement. I found, upon examination, the abdomen distended with a large ovarian tumor, the uterus located behind it.

A few days later I operated upon her at the Memorial Hospital, removing an ovarian cyst which contained two and one-fourth gallons of fluid. Much to my surprise I found the uterus about three months pregnant. She made an uneventful recovery, and was afterwards delivered of a full term child. I will add that since then she has given birth to another child.

Case II. Mrs. K., aged 28, married four years, had been under my care for several years. She had had no children, but had twice aborted between the second and third months. She became pregnant again, and during the second month complained of considerable pain in her right side. Upon exami-

* Read before the New York Obstetrical Society, May 8, 1900.

nation, a mass about the size of a walnut could be easily felt to the right of and behind the uterus. This was supposed to be an enlarged and congested ovary. Seeing her from time to time, it was soon discovered that this mass was undoubtedly increasing in size, and that it was adherent and could not be dislodged from its location in the small pelvis, either by manipulation or position. It was apparent that an operation would be necessary, and it was decided to perform it at the end of the thirty-second week, hoping that if the operation did induce labor that a viable child would be obtained, and that if she went to full term the wound in the abdomen would be thoroughly healed. With the kind assistance of Dr. Coe, I succeeded, with but little difficulty, in removing a dermoid cyst of the right ovary. The patient progressed most favorably for three weeks, there being no uterine contractions of any moment. At the end of this time, however, without warning, the membranes ruptured, and the patient was delivered of a poorly nourished child which succumbed about twelve hours later.

I have since delivered this patient of a full term, healthy male child.

Case III. Mrs. D., aged 32, married eighteen months, had never before been pregnant, was sent to me for confinement. Her physician, who had known her since childhood, said that she had always been a poorly nourished and delicate creature. She was first examined during her third month of pregnancy. At this time three fibroids could be easily made out through the greatly thinned abdominal walls. The largest, about the size of an orange, was situated near the fundus, just to the left of the median line, and was more or less sessile in character. The other two were rather low down on the right side, smaller in size, but also firmly attached to the uterus, as no free mobility could be imparted to them. The lower one, upon the right side, was within the small pelvis, but was apparently not larger than an egg. The patient was delivered, after a somewhat tedious labor, with no complication, except a rather profuse hemorrhage which was controlled with intrauterine injections of hot iodine solution.

The patient passed back to the care of her physician, who has

recently informed me that the fibroids are much reduced in size, though still present.

Case IV. Mrs. R., aged 35, pregnant for the second time, consulted me during the sixth month of her pregnancy. She complained of pain referable to the left iliac region, upon coughing. This latter symptom was severe, as the patient was in an advanced state of pulmonary tuberculosis.

Upon examination, nothing more than a rather tender mass, no larger than one's thumb, could be felt in the cul-de-sac of Douglas and to the left of median line. This was supposed to be an old exudate which had become somewhat tender under the influence of the pregnancy. Various remedial agents were employed, but the cough which was at times most distressing, persisted. Labor took place at full term and was rather precipitate, the second stage being completed within forty minutes from the time labor began.

Immediately upon the expulsion of the child, the patient complained of severe pain located underneath the left diaphragmatic region. This persisted after the expulsion of the placenta, and the pulse, which had been for months from 115 to 125, ran up to 140. There was no bleeding, however, and I ascribed the increase of pulse rate to nervousness occasioned by the pain of which the patient complained bitterly. Morphine soon relieved the pain. Upon seeing the patient eight hours later I was surprised to find the abdomen greatly distended with gas and, though the pain had to some degree recurred, it was not so severe.

Laxatives and enemas would produce large watery evacuations, but the distention increased. One week after the confinement, fluid in both flanks could be easily made out. The temperature had at no time reached 101°, but the pulse was from 120 to 150.

I decided the patient had tubercular peritonitis with effusion, and two days later Dr. Coe, seeing her in consultation, agreed in the diagnosis. The fluid rapidly increased until there was free fluctuation over the entire lower abdomen, and the flatness on percussion could be easily changed by position, showing that the fluid was in the free peritoneal cavity.

On the thirteenth day after labor, the patient complained of a very sore pain in the umbilicus. This the nurse sought to relieve by constant applications of alcohol. In the evening of this day, the husband telephoned that a water blister had formed on the umbilicus, and directions were given that it should be clipped with scissors and a dry dressing applied. In a few minutes I was hastily called, and upon arrival was told by the nurse that when she clipped the supposed blister there was a loud report which was heard by the husband who was in a room removed from that of the patient by at least forty feet, and that, coincident with the report, a stream of water and feces, more than eighteen inches in height, was ejected. I found the abdomen much reduced in size, and from the small opening in the umbilicus two quarts more of fluid of similar character was drawn off by simply turning the patient on her side. This continued to flow for ten days, at the end of which time the patient died. An autopsy was unfortunately denied, and we will never know just where the rupture in the intestine took place. It is probable, however, that the mass felt in the pelvis was a knuckle of gut, held down by adhesion to an old exudate, and that its rupture took place coincident with the completion of the second stage of labor. It seems almost unreasonable that the free peritoneal cavity could have tolerated such a condition for twenty-three days.

Case V. Mrs. M., 31 years of age, the mother of three children, was seen by me in consultation. She was five months pregnant, and for about four weeks had complained of a great deal of pain on the left side in the region of the kidney. She stated that for eight months she had been aware of a "lump" in this locality. She denied ever having had any pain in this location until recently, and that she had had no chills or fever. A tumor of the kidney was diagnosed, and in the absence of temperature it was thought that most probably it was a cyst. She was sent to the Memorial Hospital, where a few days later I operated upon her, removing the left kidney. I made the anterior incision rather than the posterior one, on account of the size of the tumor, it being eight inches in its greatest diameter by five in its lesser. Without any special difficulty it was

enucleated from its peritoneal covering. The latter was then closed and drained through a posterior lumbar incision. Upon opening the kidney it was found to have had its entire normal structure replaced by a rather thin, greenish yellow pus.

The patient recovered with no untoward symptoms, and her physician recently delivered her, at term, of a healthy child.

Although we may lay down rules for our guidance in such cases, we are well aware that each case must be dealt within its own merits. Again, indications in the early months of pregnancy are often contraindications at or near full term. Ovarian tumors, even of small size within the pelvis, will, if adherent so that they cannot be pushed up, offer such obstacles to the delivery of the child that an operation will become necessary. Those of larger size, in the pelvis or even above the brim, will, by the production of too great pressure on other organs, likewise demand operation. It must also be borne in mind that such tumors seem to be peculiarly liable to torsion of their pedicles during the process of pregnancy and in this way, otherwise harmless, may demand immediate operation. Before full term and after viability of the child it would seem that the method of operation upon such tumors must be decided in a great measure by their location. Those well down in the pelvis being reached through a vaginal section, while those high up by laparotomy.

It would seem, however, always preferable to attack dermoid tumors of the ovary from above, where greater room for manipulation would lessen the danger of rupture and consequent contamination of the peritoneum.

At term, ovarian tumors which prevent the descent of the child may often be advantageously punctured and drained per vaginam, leaving the operation of its removal to some future date. It must be remembered, however, that bruising the sac wall of such a cyst from the necessary pressure of the head may cause necrosis. Small cysts, non-adherent, may at times be pushed up out of the way of the descending head by placing the patient in Trendelenburg's position.

Fibroid tumors probably present greater difficulties to the birth of the child than any other class of tumors, both by reason of their far greater frequency as a complication and their solid

resistance. In the early months of pregnancy, if the location of the fibroid growth is of such a character as will presuppose great difficulty to the birth of the child, the writer is free to say that an abortion, if this is not made too hazardous by the tortuousness of the uterine canal, or hysterectomy, is far preferable to advising the patient going to full term with the great probability of a Cæsarean section.

We owe a duty to the mother first, and it is not fair to her to put her life in such grave jeopardy for a child which has so many chances of dying in utero, and which is rendered so often a weakling of short life, even if it survives the operation necessary for its delivery. Of course when there is a great desire on the part of the parents for an heir, their wishes must be considered. It is a well known fact, however, that the operation for the removal of the uterus at term is fraught with far graver dangers than during the early months of pregnancy.

If the patient is seen for the first time at or near full term, then our only resort is Cæsarean section, for the attempt to deliver by craniotomy or any like procedure in such cases is even more dangerous to the mother, to say nothing of the fatality to the child.

Fibroid tumors situated at or near the fundus, unless of great size, will seldom cause trouble at time of delivery. Even in this locality they may undergo suppurative processes and require operation at any time during pregnancy. Such a case has been reported to this society recently.

It is well to bear in mind that the uterus, which is the site of fibroids, will sometimes contract but poorly, and unusual precautions must be taken to prevent hemorrhage at time of delivery.

It certainly seems a wise provision on the part of nature that the presence of pus in one tube or ovary so frequently means a similar condition of the other side, thereby preventing the possibility of conception in certainly one of the gravest complications of pregnancy and labor.

Unfortunately, in this respect at least, women do sometimes have a healthy tube and ovary on one side, with pus in the other. This condition demands operation at any time that it is discov-

ered, regardless of the stage of the pregnancy. Where the pus tube or ovarian abscess is not discovered, or as was in Case IV as reported, not believed to be of sufficient moment to demand operation, until after delivery the condition must be treated symptomatically. There is no question but many of the cases which are reported as developing sepsis immediately after delivery are of this character. The probabilities of injury to a pus tube or ovary during delivery being so great as to render this the most grave complication of pregnancy.

Case V represents a somewhat unusual complication in pregnancy, yet at the same time possesses some points of great interest. I have no explanations to suggest as to the absence of temperature in this case or why the pain was not present until after pregnancy supervened. Malignant tumors complicating pregnancy must be operated upon as soon as discovered, if their removal holds out any probability of cure for the mother. If, however, they are not discovered until such a possibility is hopeless, then it would seem wise to delay until term, in the interests of the child.

Tumors of the cervix which are of sufficient size to complicate delivery are best treated at or near term, since manipulation of

Cystic tumors of vagina, together with cystic degeneration or cervix seems so prone to excite uterine contractions. abscess of the vulvo-vaginal glands may be operated upon as soon as discovered.

In conclusion, the writer wishes to emphasize the absolute importance of the careful examination of every case of pregnancy some months previous to the expected confinement.

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DIAGNOSIS OF THE ATTITUDE OF FOETUS IN
UTERO BY EXTERNAL EXAMINATION.*

E. GUSTAV ZINKE, M. D.

Mr. President and Members of the Society: It may be truthfully stated that there is no department of medicine so generally practiced, yet so little studied and so especially neglected by the rank and file of the profession, as that of Obstetrics. In the brief space of 10 minutes granted for the reading of a paper, I will not waste a word in defence of this assertion. Those well informed, will acknowledge that it is but too true. The cause is twofold:

1st. Nature does her work so well that the majority of general practitioners trust to her and begin their efforts of finding the cause of delay, or send for aid and consultation only, when she fails to accomplish her task.

2nd. The colleges of the country, with a few praiseworthy exceptions, have not improved as much the method of teaching the art of midwifery as they have other less practical, though perhaps equally important departments.

It is an earnest appreciation of these two facts that has prompted me to come before you and dwell upon a subject so simple, though not old, that it is readily lost sight of and forgotten by those who know it once, so easy of acquirement to those to whom it may be new, and so interesting in itself that it rarely fails to attract attention, even on the part of those who continue to deny the possibility of making a diagnosis of the various presentations of the fœtus and their different positions at any time before labor.

In a large obstetric practice, extending over a period of 25 years, and including private, hospital and out-door clinical experience, I am ready to maintain that: *In nine cases out of ten,*

*Read at the 55th Annual Meeting of the Ohio State Medical Society at Columbus, O., May 10, 1900.

the attitude of the foetus can be established, during the last ten weeks of gestation, by the external means of diagnosis alone.

It has often surprised me that the majority of general practitioners are so little concerned about the attitude of the fœtus, the capacity of the woman's pelvis and the prophylaxis of puerperal sepsis. (My remarks must, for want of time, be limited to the first of these.)

Is it necessary to say a word as to the importance of knowing the presentation and its position before the event of labor? If so, let it be brought out in the discussion.

The diagnosis of the position of the fœtus in utero is made by inspection, palpation and auscultation.

By the first we determine the contour, size and position of the uterus, and frequently also the fœtal movements may be observed.

By the second we locate the movements, the head and back of the fœtus.

By the third we find the site where the impulse of the fœtal heart can be heard with greatest intensity.

The recumbent position, with patient upon a bed, cot or lounge, and lying upon her back, all clothes (except a night-gown) removed, the abdomen bared or covered with a light sheet only, is the most favorable posture and condition for a successful examination.

In order to be as exact as possible, the anterior abdominal surface is divided into four quadrants by two real or imaginary lines; one extending along the median line from the tip of the ensiform cartilage above, to the middle of the symphysis pubis below; the other crosses the first at right angles on a level with the umbilicus. (Fig. 1 to 4, lines ab and cd.) The four spaces thus obtained are called, respectively, *the right and left upper, and the right and left lower abdominal quadrants.*

INSPECTION.

(With lower extremities extended.)

If, upon inspection, we find that the long diameter of the pregnant uterus runs from below upward, as is indicated by the

continuous line u. u., in Figs. 1 and 2, representing the uterus, we know at once that the child it contains lies with its long diameter in the same direction; the head either opposite the internal os or the fundus. The locality of the head is indicated by the locality of the foetal "movements" (the feet). They may be seen on inspection or felt upon palpation. If, under the condition represented in Figs. 1 and 2, the movements of the feet can be seen or felt high up near the fundus, we have—very likely—a vertex presentation; if low down, in the pubic or iliac regions, the breech probably presents.

PALPATION.

(With lower extremities flexed and abdominal wall relaxed.)

If, upon palpation, we can definitely locate the movements of the feet, we at once palpate for the round, hard mass of the foetal head in a region directly opposite to that where the movements are felt. Thus if the feet are found to be near the fundus, the head will be discovered near the pubes and vice versa. Having determined the residence of both head and feet, the back of the child may be traced between the two and will be found on the mother's left or right side, as the case may be.

AUSCULTATION.

(With lower extremities extended.)

If, upon auscultation, the foetal heart's impulse is heard distinctly below the level of the umbilicus, the head is probably nearer the pelvic inlet than the fundus uteri; and vice versa if it be heard above the level of the umbilicus. On whatever side of the median line the foetal heart may best be heard there lies the back of the child.

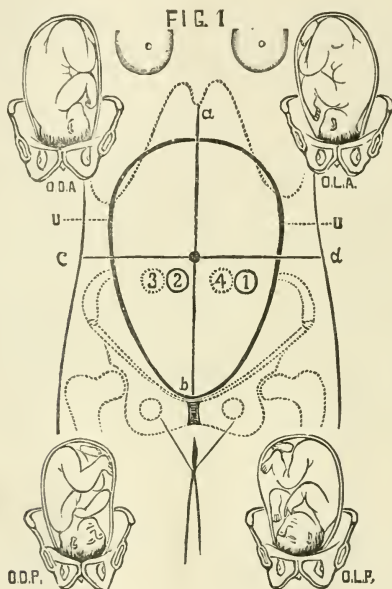
Thus the questions to be answered in each examination are:

1. In which direction lies the longest diameter of the uterus?
2. Where are the foetal movements to be seen or felt?
3. Where is the foetal heart to be heard with greatest intensity?
4. In what part of the uterine cavity lies the head or breech of the child?

DIAGNOSIS OF VERTEX PRESENTATIONS.

First Position of the Vertex. (Compare O. L. A., Fig. 1.)

The long diameter of the uterus is found in the long axis of the mother's body; the fœtal movements are seen or felt in right upper quadrant near the fundus; the head will be felt behind



FOUR POSITIONS OF THE VERTEX.

- O. L. A. Occipito-læva anterior.
- O. D. A. Occipito-dextra anterior.
- O. D. P. Occipito-dextra posterior.
- O. L. P. Occipito-læva posterior.

1, 2, 3, 4. Site where fœtal heart may be heard with greatest intensity in the various positions of the vertex presentations. Solid circle indicates the sound as plainly audible; the dotted circle, as feebly audible. In the former the back of the child rests anteriorly; in the latter, posteriorly. U. U. Uterus.

the pubes, and the foetal heart will be heard with greatest intensity in the left lower quadrant at 1, Fig. 1.

Fourth Position of the Vertex. (Compare O. L. P., Fig. 1.)

(Exceedingly rare.) If it does exist: The long diameter of the uterus is as before; the foetal movements are much more distinct, high up and in the right upper quadrant; the head will be plainly felt behind the pubes; but the back of the child is not readily palpable and the foetal heart's impulse, if audible, is much less distinct and perhaps nearer the median line in the left lower quadrant at 4, Fig. 1.

Second Position of the Vertex. (Compare O. D. A., Fig. 1.)

The long diameter of the uterus is as before; the foetal movements are seen or felt in the left upper quadrant near the fundus; the head is felt behind the pubes; the foetal heart may be distinctly heard in the right lower quadrant at 2, Fig. 1.

Third Position of the Vertex. (Compare O. D. P., Fig. 1.)

The long diameter of the uterus as above; the foetal movements are seen or felt much more distinctly in the left upper quadrant near the fundus; the head will be plainly felt near the pelvic inlet; the back is not easily palpable; the foetal heart sound may be entirely absent or, if audible, is only feebly heard at 3, Fig. 1.

DIAGNOSIS OF BREECH-PRESENTATIONS.

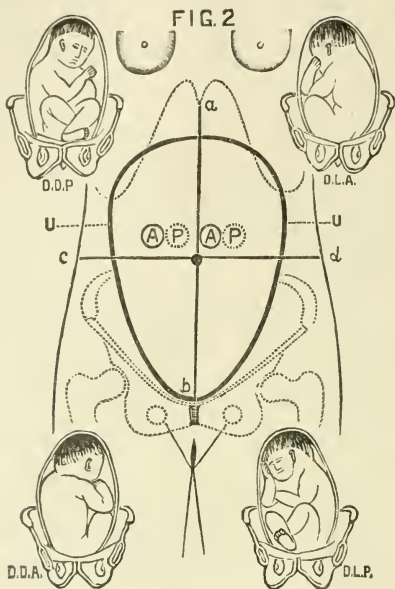
Dorso-anterior and to the left. (Compare D. L. A., Fig. 2.)

Long diameter of the uterus as in vertex presentation, foetal movements are found in the right lower quadrant and posteriorly; foetal head, more or less, in right upper quadrant at the fundus; back of the child is to the mother's left and anterior; foetal heart is distinctly heard in the left upper quadrant near the median line and not far from the umbilicus, at A, Fig. 2.

Dorso-posterior and to the left. (Compare D. L. P., Fig. 2.)

The same as the last; but the foetal movements are very distinct, low down, anteriorly and to the right; the back is not

easily outlined; the foetal heart, if audible at all, is found in the left upper quadrant at P, Fig. 2.



THE FOUR POSITIONS OF THE BREECH.

- D. L. A. Dorso-læva anterior.
- D. D. A. Dorso-dextra anterior.
- D. D. P. Dorso-dextra posterior.
- D. L. P. Dorso-læva posterior.

A and P. Site where the foetal heart may be heard with the greatest intensity in the various positions of breech presentations. Solid and dotted circles indicate the same as in Fig. 1. U. U. Uterus.

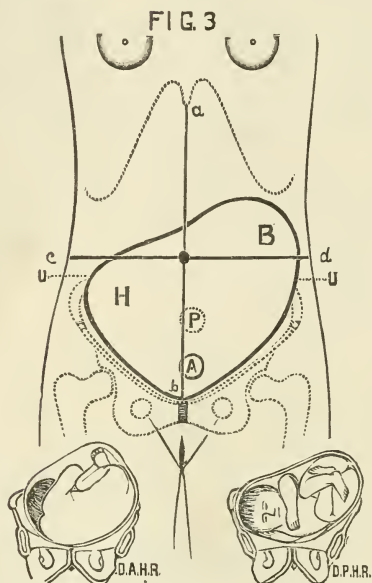
Dorso-anterior and to the right. (Compare D. D. A., Fig. 2.)

The same as in D. L. A., except that the back of the foetus is felt anteriorly and to the right; the foetal movements are felt in the left lower quadrant and posteriorly; the foetal heart is heard distinctly in the right upper quadrant at A, Fig. 2.

Dorso-posterior and to the right. (Compare D. D. P., Fig. 2.)

Like the preceding, except that the foetal movements are felt

anteriorly, to the left and low down, and that the foetal heart sound may not be audible, or but feebly present in right upper quadrant at P, Fig. 2.



HEAD LOW VARIETY OF OBLIQUE OR TRANSVERSE PRESENTATIONS.

- D. A. H. R. Dorso-anterior, head to right.
- D. P. H. R. Dorso-posterior, head to right.
- H. Locality of the head.
- B. Locality of the breech.
- A. Locality of the foetal heart in dorso-anterior.
- P. Locality of the foetal heart in dorso-posterior.
- U. U. Uterus.

DIAGNOSIS OF OBLIQUE, TRANSVERSE OR SHOULDER-PRESENTATIONS.

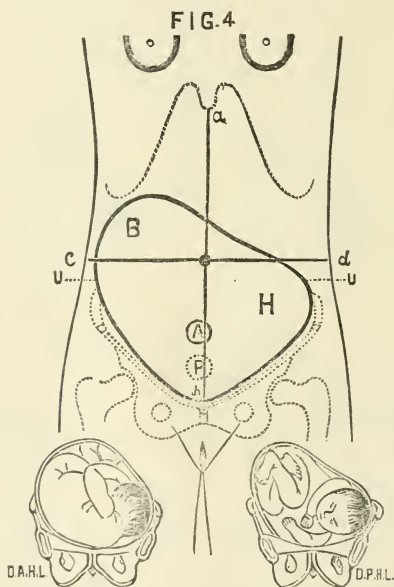
Dorso-anterior, head low and to the right. (Compare D. A. H. R., Fig. 3.)

Long diameter of the uterus from side to side. Head can be distinctly felt at H, Fig. 3; the breech may be easily outlined at

B, Fig. 3; foetal movements are felt in left hypochondriac region, posteriorly; the back of the child can be traced along the anterior abdominal wall, and the foetal heart is heard with greatest intensity immediately above the symphysis a little to the left of the median line at A, Fig. 3.

Dorso-posterior, head low and to the right. (Compare D. P. H. R., Fig. 3.)

Long diameter of the uterus as in the former. Head and breech also in the same region; but the foetal movements can be seen and felt all over the lower anterior abdominal wall and the foetal heart sound, if heard at all, is very feeble and may best be heard at P, Fig 3.



HEAD LOW VARIETY OF PRESENTATIONS, OBLIQUE OR TRANSVERSE.

D. A. H. L. Dorso-anterior, head to left.

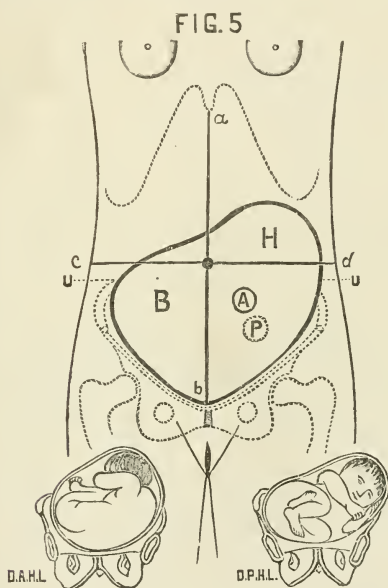
D. P. H. L. Dorso-posterior, head to left.

H., B., A., P. Same as in Fig. 3.

U. U. Uterus.

Dorso-anterior, head low and to the left, and dorso-posterior head low and to the left. (Compare D. A. H. L. and D. P. H. L., Fig. 4.)

These two positions show exactly the reverse of the two preceding. At H, the head; at B, the breech; at A, the foetal heart is plainly audible in dorso-anterior; at P, the heart is feebly audible, if dorso-posterior. In dorso-anterior position the back is easily recognized below the level of the umbilicus; in dorso-posterior, the feet will be felt instead.



HEAD HIGH VARIETY OF OBLIQUE OR TRANSVERSE PRESENTATIONS.

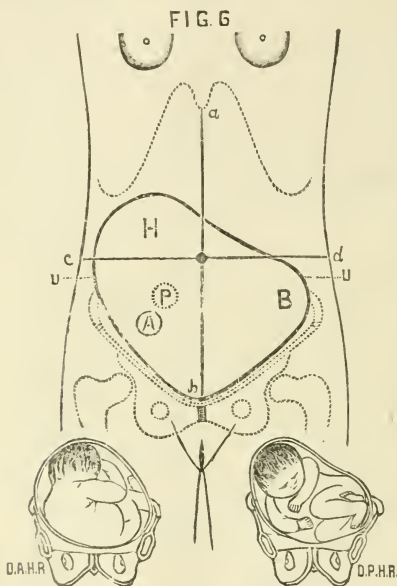
D. A. H. L. Dorso-anterior, head to left.

D. P. H. L. Dorso-posterior, head to left.

H., B., A., P., and U., U., as in Figs. 3 and 4.

In those rare instances, when the head rests higher than the breech, as indicated by H and B. Figs. 5 and 6, there is no change from the former in the shape of the uterus; the head, the breech,

back and extremities of the fœtus are as easily determined as in the head-low varieties; but in the one, the fœtal heart's action will be heard decidedly to the left, in the other to the right, of the median line and below the level of the umbilicus, as indicated in Figs. 5 and 6 and by A and P.



HEAD HIGH VARIETY OF OBLIQUE OR TRANSVERSE PRESENTATIONS.

D. A. H. R. Dorso-anterior, head to right.

D. P. H. R. Dorso-posterior, head to right.

H., B., A., P., and U., U., as in Figs. 3, 4 and 5.

I have purposely excluded from this paper face and complex presentations. Face presentations before labor are so rare that it is almost needless to look for them. I have never seen one myself or, at least, have never discovered one until after the first stage of labor was well advanced and the membranes ruptured. Still, there is no doubt that even in primary face presentations the diagnosis may be made, in some cases, by the external means of diagnosis. But in the preponderance of this class of cases, as

in complex presentations, a diagnosis can only be made by the combined method of examination with or without the introduction of the whole hand into the vagina or uterus after the membranes have ruptured and the os sufficiently dilated to admit of the introduction of the finger or the hand into the uterine cavity.

More might be said, but I must not exceed the limits of my time. What there may be wanting, let it be brought out in the discussion.

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HYDATIDS AND HYDATIDIFORM CYSTS.

J. M. FASSIG, M.D.

One of the most important fields in practical medicine, one which requires keen, quick judgment in its management, and this based upon thorough knowledge, is the pregnant state. In this line of work our best educator is found in bedside experience.

I feel safe in stating, although years of practice has been our lot, yet there are certain phases of disease, certain abnormalities of nature which have never come within our experience for treatment. It is mainly cases of this class which prompted me to present to the profession this subject of *hydatids and hydatidiform cysts*.

Normal pregnancies, natural deliveries are easily managed, but when we are side-tracked by any deviation, no matter how slight, we are often taxed to the fullest extent of our ready knowledge; yes, I can say, often taxed to the fullest extent of any knowledge which we are able to bring to our assistance by the use of text-books.

To thoroughly understand the word hydatid, we shall be compelled to go back to the earliest pathologists, who applied this word to entozoa, such as infest the liver, the bladder and the different kinds of tissue. The Greek derivation of this word means a drop of water, while the Germans employ the word *Blassenwurm*, literally translated into bladder worm, which coincides

with the views of the earlier pathologists as to hydatids meaning entozoa.

Pathologists of today use this word more freely and apply it to any encysted tumor which contains watery and transparent fluid, and which is developed within the organ, but not adhering to its tissues. For such growths the adjective hydatidiform was coined to describe their resemblance to hydatids.

We recognize but one true form of hydatids, notwithstanding the fact that many varieties and classifications have been named; more recent investigators have culled them down to one distinct variety, although this is liable to assume different shapes.

Ordinary hydatids, while presenting different shapes, according to the nature of the organ occupied, commonly exhibit a thick investing capsule, derived directly from the tissue of the infested part. Dividing this capsule with a knife, it coils upon itself, displaying a peculiar tremulous motion. The vital part of hydatids is found in the endocyst and consists of a thin, soft, comparatively unelastic granular tissue, which investigators look upon as the reproducing tissue, since it has been proven that from it buds develop, which in turn form the heads for fresh hydatids.

Those in authority claim that the prevalence of hydatids in any country bears a strict and intimate relation between its inhabitants and the lower animals which they rear; especially is this apparent in their relation to dogs. The organs most commonly affected by hydatids are of great concern clinically; statistics have proven their prevalence as follows: liver, lungs, kidney, bladder, abdomen, pelvic cavity, uterus, spleen, brain, bones, heart and pulmonary vessels. It has been shown that this disease proves fatal in at least twenty-five per cent of the human victims so affected. No doubt this percentage would be much larger if a more accurate diagnosis of their presence could be reached. Judging from the literature on this subject which is at my disposal, many deaths, directly due to the growth of hydatids, are explained to the health bureaus, as due to other more easily named causes. The largest per cent of these cases present extreme difficulty in respect to a correct diagnosis, especially in cases in which hydatids occur in the brain, heart and bones.

The hygienic surroundings must and do afford a valuable factor in our conclusions. Oftentimes we remain completely in the dark as to their presence, until by fate we are enlightened by the accidental discharge of one or more of these hydatid cysts. This is positive proof, and without it an accurate diagnosis cannot be reached.

That these cysts are discharged by the natural out-let is well known by all practicing physicians; and where suspected, it is well to keep these out-lets well guarded, by instructing the patient or the nurse of such a possibility, and in this manner get the earliest clue to our suspicion.

Writers on this subject claim that frequently hydatids have been located by the surgeons' knife, when their presence was not so much as suspected by the operator. With such difficulties to be overcome, a mistake in diagnosis is not to be condemned by fellow practitioners, by physicians who chance to follow us in attendance on these peculiar cases.

One physician may attend a patient afflicted with hydatids faithfully and scientifically to the best of his ability, yet fail completely in locating the true cause, or, in the least, giving relief. The patient becoming dissatisfied, loses faith and confidence, dismisses the one in attendance and consults another, perhaps no more learned or experienced in his management; yet the fates which govern most things, may be a little more considerate of him, dislodge one or more cysts, which make their escape, and by so doing help to crown the *other one* with glory and praise. Valuable information has been given to him; this makes the road to relief and treatment easy. Were it not for this timely escape of the cysts, he, too, would, in all probability, have been confused and mystified as to the true diagnosis.

I have gradually brought the word hydatid to hydatidiform; there is a close connection, yet the adjective hydatidiform is really of more interest to us in our general practice today than the true hydatids. We, at least, occasionally, read of cases in which hydatidiform cysts have played an important part, while in this country true hydatids are extremely rare. In order to circumscribe this essay, I shall be compelled to confine my remarks to the so-called hydatids of the uterus.

At the present time no pathologist classifies these grape-like vesicles, which sometimes occupy the uterus, as true hydatids, similar to those which are known to infest the liver, heart or brain; but describe them as hydatidiform mole, or as vesicular mole, using the adjective hydatiform, since these cysts closely resemble the true hydatids in shape, appearance and habitat. Early investigators considered these cysts as unfecundated ova, but this idea was really never generally accepted. It was Velpeau's lot to demonstrate positively that these vesicles had nothing in common with true hydatids, but that they resulted from hydropic transformation of the characteristic villi of the chorion. The exact mode and causes of this transformation have not been satisfactorily settled, recent writers calling it a myxomatous degeneration. Playfair speaks of these cysts as bladder-like bodies, and states that they vary in size from that of a millet seed to an acorn; other authorities describe them as resembling a bunch of grapes, or a bunch of currants.

I feel that this resemblance is merely fanciful, since it has been shown that each cyst is not attached by independent pedicles, but some of them grow from other cysts, and others are attached directly to the chorion.

Whether or not this disease is directly due to the death of the fœtus, the whole force in the development being expended in the chorion, thus resulting in a cystic degeneration, is an open question. Many writers take this view and they are strengthened in this by the fact that the fœtus has entirely disappeared. Others, equally eminent authority, claim that if all the villi of the chorion are involved the life of the ovum is always sacrificed; while on the other hand, if only a small portion is involved, the ovum is not necessarily destroyed and its development may continue. The cause of this degeneration is not by any means an accepted fact. *Endometritis* deserves the lion's share as a factor predisposing to the development of cystic degeneration in the uterus. *Syphilis* in the mother has its adherents as to its causation. In my opinion endometritis and syphilis would be exciting causes, rather than the direct cause *per se*. Most authorities are of one accord, that this disease originates in early pregnancy, before the placenta has begun to form.

We must not lose sight of the fact that true hydatids, those of entozoic origin, may form in the uterus as in other parts of the body and should not be confounded with disease of the chorionic villi, although the symptoms and the history would be identical. Playfair says: great injustice might result of a too hasty decision, especially when we have these hydatids dislodged from an unmarried female. Her chastity might be questioned; therefore, medical experts cannot be too careful in studying these cases. The symptoms of this disease are somewhat clouded, obscured by simulating true pregnancy and often require the keenest diagnostic ability. In these cases pregnancy begins, and with it the usual characteristic symptoms; but as it advances, as these cysts increase in size and in numbers, the reflex irritations and the general disturbances are intensified.

The rapid increase in the size of the uterus, together with the usual irregular outline in these cases, is one of the best defined symptoms; and when present in connection with the aggravated reflex irritations, should stimulate our thoughts toward hydatiform pregnancy. Sometimes there is present a bloody-watery discharge, which is said to be due directly to some of these cysts breaking down and discharging their contents.

Vaginal examination is claimed by some to be of little consequence, except where we find the os dilated. Let me ask in this connection how we can ascertain the size and contour of the uterus without vaginal examinations. Much stress is given to that peculiar doughy, boggy feeling of the uterus; this is another of the characteristic symptoms which is usually present and must be felt to be fully appreciated.

Most text-books place great value on uterine hemorrhage, which may assume a dangerous proportion; yet this symptom is not always present. Last, but not by any means least, is the mention of the only certain symptoms, namely, the discharge of one or more of these vesicular cysts; this tells the tale, when all other symptoms are but misleading and confusing.

We now come to the management of these cases; as soon as a positive diagnosis is established it becomes obvious that the sooner the uterus is emptied of these hydatiform cysts the earlier

chances for the patient's recovery. Depletion of the patient and septic infection are the dangers to be avoided.

The expectant plan of treatment is the only safe one you can adopt while awaiting a confirmation of your suspicion. Overcome, if possible, the annoying reflex symptoms and sustain the strength of the patient. Do not make too frequent and meddlesome vaginal examinations, and great care should be exercised in the use of the uterine sound, especially where your suspicions have not been confirmed; although this must be left to the discretion of the operator, for upon his judgment the life of the patient may depend and immediate action is called for.

Internal medication is spoken of by some writers; this should not have any consideration except in cases where an early diagnosis has been made and the strength of the patient has not been undermined. Ergot has been recommended to stimulate the uterine muscles, hoping by their contraction to empty the uterus of its contents.

Do not consume valuable time in waiting for ergot or any other internal medication to act; dilate the os, and with the finger, or the whole hand, if necessary, as, when there happens to be dangerous hemorrhage, remove the mass. The curette suggests itself; do not forget the danger of puncturing the thinned walls of the uterus. Use the blunt curette and this with the greatest care and skill.

Any hemorrhage which may occur after the mass has been removed can readily be overcome by swabbing the uterus with the perchloride of iron, or by the administration of ergot, for at this time the ergot will have some good results.

Having overcome all immediate danger, having the patient and her surroundings made as comfortable as possible, next let the strength of the patient demand your attention.

The sulphate of strychnia is excellent in its tonic effects where we have a depleted system; this, in connection with a mild, stimulating tonic and a good nourishing diet, will soon restore your patient to her wonted health.

That these cases are rare, I am sanguine that all will acknowledge; therefore, I beg your indulgence in the following report of the only case which has come under my care:

On the 13th day of January, 1897, I was called to see Mrs. M——, a refined and cultured young married woman, aged 28 years. Her personal and family history were exceedingly good, and with the exception of a retroflexed uterus, due to a fall she had sustained while attending college seven years previous, her health had always been good. She was properly treated at the time for this displacement and had had no return of it since, at least, not to her knowledge. She was the mother of a boy two years old, her only pregnancy, the confinement of which was normal and its effect good, except as to one point. My first visit found her in a very nervous condition, which she explained was due to an aggravated hemorrhoid, which was causing her great distress and pain. She informed me that these hemorrhoids dated back and took their origin at the time of her confinement, which fact is not uncommon.

After local examination I found a large hemorrhoidal tumor and suggested ligation, which she opposed most emphatically, begging me to use any other means at my disposal. After applying local treatment for a few days and deriving no benefit, I injected the tumor with a carbolic acid solution, fully realizing the danger from this process, yet this had been done successfully and I felt that in this case it was worth the trial.

I employed a 20 per cent solution, making two injections into the tumor. The first effect was to inflame the tissue; this quickly abated, and the hemorrhoids shrivelled up in the course of two weeks. I felt satisfied that in this respect my patient was benefited, having enforced complete rest during this period; but the extreme nervous irritability still remained; nausea had set in, especially in the early morning; menstruation had been missed for one period; she was anemic and was troubled with insomnia. In her own words: she was miserable.

I suspected pregnancy, and so informed her, but she positively denied any possibility, yet this did not thwart me in my suspicion. After watching her attentively for ten days this suspicion was strengthened and I asked for a vaginal examination. The absence of her menstruation, the persistent nausea, especially in the morning, encouraged me in my hopes that I would find

pregnancy as the exciting cause of the general disturbance from which my patient was so stubbornly suffering.

I found an enlarged uterus which I felt certain was due to pregnancy; the uterus was also retroflexed, and this deviation, although slight, I imagined was the irritating cause of these reflexes. Fearing lest she was normally pregnant, I refrained from using the uterine sound in correcting this slight malposition and resorted to the use of a cotton pledget to act as a pessary. Introducing my improvised support, and having the woman assume the knee-chest position, I crowded this pessary back of the uterus, in Douglas' cul-de-sac. Little, if any, benefit was derived from this course, yet it afforded me the privilege of repeated examinations, facilitating the study of the case.

The growth of the uterus struck me as marvellous; the outline became irregular, and that peculiar doughy, boggy feel to the touch became very apparent. I remarked to the patient that it was of mushroom growth; a decided change in its size was apparent over night.

I was using expectant treatment internally, administering the lightest and most easily assimilating food, sustaining the strength of my patient the best I could.

All my efforts were futile; the nausea, which had become distressing, was intensified; she could retain nothing on her stomach; she was prostrated by weakness.

The desire to introduce a sound into this rapidly growing uterus became almost irresistible, so anxious was I to learn the nature of this case, even at the almost certain risk of causing a miscarriage; but my patient was desirous of deferring this intervention, if possible.

The next menstrual period passed and no trace of it was seen. At no time during my management of this case did she have any watery or bloody discharge; I called her attention to this symptom and had her ready to report the faintest trace. At none of my vaginal examinations was the os dilated.

The symptoms were assuming an alarming aspect. I discerned dissatisfaction in her friends; in this, I did not blame them, and suggested a consultation.

The one physician whom they preferred as consultant had

been in the family prior to my attendance; they feared that he would not consent to come. They did not realize and appreciate the willingness among physicians to help one another. I mentioned other learned men whom I could gladly call in to my assistance, but was met by them with a refusal. This brings me to the afternoon of March 7; although the patient was no worse, I left her bedside with the understanding that the husband would call upon the former physician and make all the necessary arrangements for a consultation the next morning; this was perfectly satisfactory to me.

Early the next morning I received a note from the husband, stating that my attendance upon Mrs. M—— was no longer desired, and for me to send in my bill for services rendered. This formally dismissed me, and I soon learned that the discarded physician had been reinstated.

My professional relation to this case, and perhaps to any case in this family, was severed, yet my interest did not abate. My first opportunity to find out the sequel to this report was eagerly grasped and I learned that my successor was able, with the use of cocaine, to quiet, in part, the irritability of the stomach, had some nourishment retained, made his patient more comfortable, had a trained nurse placed over her to assist in watching the developments.

He stated to me that at first the case mystified him; that he did not know what was the matter with the woman; but all this was cleared up at the expiration of one week, when at his morning's visit the nurse called his attention to some of the hydatiform cysts, which had been discharged during the previous night.

As the boys say: The jig was up and the game easy. He curetted the uterus, removed the mass, and his patient, with the aid of tonics, made an uninterrupted recovery. Such is the decree the fates sometimes have in store for us; whether good or bad, we must abide by it. For this reason let us be considerate of one another in our professional work.

109 N. Sixth Street, Zanesville, O.

THE TECHNIQUE IN OPERATIONS FOR INTRA-LIGAMENTARY, CYSTIC AND SOLID TUMORS.*

WM. H. WATHEN, M.D.

He did not dwell upon the uncomplicated cases where the tumors ascend in the abdominal cavity, and are not deeply seated in the pelvis, but confined his remarks to such cases as enfold the broad ligaments, burrow deep in pelvic structures, separate the posterior pelvic and abdominal peritoneum, enfold the mesenteries of the rectum, sigmoid flexure, ascending colon, or the mesentery of the small bowel, and become intimately connected with vital organs which must be protected in the operation.

He advised the removal of all tumors not larger than a fetal head, per vaginam, either through the Pouch of Douglas, leaving the uterus intact; or, where this cannot be done, he performs hysterectomy, and never operates upon any patient who is not prepared for both the vaginal and abdominal methods, for complications may arise in any case that will promptly indicate the necessity for abdominal celiotomy.

In cases where the tumors are too large to be removed per vaginam, he begins the operation through the vagina, by ligating or clamping one or both uterine arteries, as may be indicated,—preferably between the ureter and the internal iliac; and when the abdomen is then opened, he controls the ovarian arteries before he begins enucleation, thereby making practically a bloodless operation. In all cases in the abdominal part of the operation, he advises the application of forceps if possible during the enucleation, because this facilitates the work, and the ligatures can be much better applied after the tumor has been removed. He claims that we can much better avoid injury to vital structures, if we primarily control hemorrhage, because the blood obscures the structures; and the surgeon, because of hemorrhage, may become confused in his work, and hurries in a degree not consistent with good surgery. He believes that pathogenetic germs do not pass through healthy peritoneum, and the reason why so many intraligamentary cysts suppurate, is be-

* Original abstract of Paper read before the American Gynecological Society, at Washington, D. C., May 1.

cause of the enfolding of the mesentery, bringing the cyst wall in direct contact with the muscularis of the bowel, with no intervening peritoneum. As there is always danger of secondary giving way of the bowel where the mesentery has been unfolded, he advises in such cases to either preserve the capsule intact, and suture it in the lower angle of the abdominal wound, or to remove superfluous parts, suture carefully and drain into the vagina through a tube introduced through an opening through the Douglas Pouch. By this means the peritoneal cavity is entirely protected from bowel rupture, or from any sort of infection from the capsule cavity; in the first instance, the drainage being through the abdominal wound, and the second, through the vagina.

He recited instances in evidence of this danger, and reported cases illustrating the dangerous conditions in which he has applied the combined infra- and supra-pubic methods, in the treatment of complicated environments.

620 Fourth Avenue, Louisville, Ky.

A CRITICAL STUDY OF URETERAL IMPLANTATION.*

J. WESLEY BOVEE, M. D.

With the development and generalization of gynecological surgery the injuries of the ureter become of more importance owing to their greater frequency. They may take any form from a kink in the ureter, due to a badly placed ligature, to the unwitting removal of several inches of the organ.

Up to 1877 there was no way of treating this accident except by Simon's procedure of removal of the corresponding kidney.

Since 1877 the severed end of the ureter has been implanted into itself, the bladder, the urthra, the rectum, the colon, the cæcum, the vagina and even to the skin. The pelvis of the opposite kidney and the opposite ureter as depots have not escaped consideration.

*Abstract of paper read at the meeting of the American Gynecological Society at Washington, May 1-3, 1900.

There are four methods of uniting the ureter when not too much tissue has been lost. There are the transverse end-to-end, the oblique end-to-end, the end-in-end, and the end-in-side or lateral implantation.

The oldest method, the transverse end-to-end, has been done twelve times, the end-in-end nine times, the oblique end-to-end once, the end-in-side four times. Thus the divided ends of the ureter have been united directly 27 times with two deaths, and in all cases which recovered union took place with preservation of the function of the ureter.

It is difficult to decide which is the best method of uretero-ureteral anastomosis. In all methods except the transverse end-to-end, there is a loss of length. In the end-to-side method as much as $1\frac{1}{2}$ inches is thus taken up. The other methods shorten the ureter from $\frac{3}{4}$ in. to 1 in. The oblique end-to-end method as devised by Bovee, is especially advantageous in cases where, owing to dilatation of the ureter one of the ends is larger than the other. By cutting one end more obliquely than the other they can be matched together better. There is not so much danger of stricture in the transverse end-to-end method in man, as was supposed from experiments on the small ureter of the dog. E. W. Cushing's case, the first in this country where the cut ends of the ureter were united (1893) is living and has no trouble with the function of the ureter.

To facilitate approximation of the ends the ureter may be separated from its normal connections pretty freely without danger. The oblique end-in-end is often valuable. No bad result comes from a slight angle at the point of union. Careful suturing is necessary to prevent leakage.

The operation of uretero-cystostomy has been reported by various operators eighty times since 1877. It is much easier than ureteral splicing. Of fifteen intraperitoneal operations done at the time of the injury, one resulted in death. Of forty-two cases of fistula, etc., four died. The operation is indicated when splicing is impossible or inadvisable. The abdominal route is far superior for uretersplicing or implantation, although exposure of the peritoneal cavity should be avoided whenever possible.

It is impossible to make the artificial union as good as a natur-

al one, because it lacks the little muscles which control the orifice.

Where neither splicing nor implantation is possible, downward displacement of the kidney may be employed to allow such a union.

Rectal implantation has been done sixty-five times with eighteen deaths or 30 per cent. By Maydl's methods this has been reduced to 21 per cent. This involves the implantation of both ureters with a piece of the bladder. There are various other operations, but this or Pozza's modification of it are the best. The danger is infection and is least in a carefully made oblique or longitudinal graft.

Grafting the ureter into the skin has been done ten times, and with bad results. The risks are much greater even than into the rectum. Very rarely can it be advisable.

Implantation of the ureter into the vagina has been done but three times. The operation was successful in each case, but the result is a perpetual infirmity.

Five cases of urethral grafting of ureters have been reported. The field is plainly limited.

Washington, D. C.

THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, May 8th, 1900.

VICE-PRESIDENT, H. J. BOLDT, M.D., IN THE CHAIR.

Dr. A. Brothers presented a specimen of Gonorrhœal Pyosalpinx removed from a woman from whom he had taken the other tube three years ago for the same affection. During these three years she had been in perfect health until recently reinfected by her husband who had contracted a fresh gonorrhœa. Dr. Brothers presented the specimen to demonstrate that a woman with one tube infected with gonorrhœa may, after its extirpation, remain in perfect health, as had this patient for three years, unless she becomes freshly infected.

Dr. Ralph Waldo agreed with Dr. Brothers.

Dr. H. J. Boldt said that if the infection is due to gonorrhœa, it is only a question of time when the patient would require another operation to be restored to health. He has found that by leaving one tube, he is subsequently compelled to operate again.

Dr. W. R. Pryor presented a dermoid cyst which had been expelled through the rectum by a woman in labor. It has obstructed labor and appearing at the rectum by a pedicle, the latter had been snipped, its end returning into the rectum. Adhering to the tumor were omentum and the Fallopian tube. The patient had complained of tenostosis for some time prior to her labor. There had never been any attempts at abortion or any hæmorrhage.

Dr. S. Marx spoke of a case of a woman four or five months pregnant, with a retroverted uterus which had become incarcerated. The uterus was jammed between the rectum and vagina. In a short time ulceration occurred and a six months' fetus was expelled by the rectum.

Dr. H. J. Boldt presented a specimen of a uterus, the seat of Adenoma-Carcinoma of the Endometrium removed by hysterectomy. On account of the patient's bad condition clamps were used instead of ligatures and nitrous oxide gas and oxygen were employed as an anaesthetic.

Dr. Joseph Brettauer said that he had seen several cases in which this combination anesthetic was used, and he had been much pleased with it. In one case a perineorrhaphy had been done three times but the perineum had not healed, because the patient had always vomited for two days after the use of ether and chloroform. He had employed nitrous oxide and oxygen and had secured a good result.

Dr. Brothers had been impressed with the rapidity with which the patient had passed into and emerged from the anæsthetic condition when this anæsthesia had been used.

Dr. E. B. Cragin liked nitrous oxide and oxygen, but thinks it should be used only when ether and chloroform are contraindicated. He related a case in which vertigo lasting half an hour had followed the use of this anaesthetic mixture.

Dr. Austin Flint, Jr., said that the late Dr. Lusk had frequently used nitrous oxide and oxygen. Relaxation of the ab-

dominal walls was, however, sometimes difficult to obtain with this anæsthetic preventing delicate manipulations.

Dr. Boldt added that relaxation is not so free when nitrous oxide alone is used as when it is combined with oxygen. He had performed a three hour operation under its influence. In abdominal operations where large tumors distend the parieties, this anæsthetic can be used throughout. There is not sufficient relaxation for intra-pelvic work, however. This form of anæsthetic is especially indicated when ether or chloroform would be dangerous.

Dr. Boldt next showed a dermoid tumor of the ovary which had simply been excised from the convex surface of an otherwise healthy ovary. He also showed a uterus removed by vaginal hysterectomy for sarcoma of the endometrium, and three fibromyomatous uteri removed by abdominal hysterectomy. One of the patients had presented the interesting phenomenon of cessation of menstruation and the appearance of milk in the breasts. She was forty-seven years old and denied the possibility of pregnancy, although the house surgeon thought she was in that condition.

Dr. Brothers said he had seen a patient with fibroids of the uterus in whom the breasts secreted milk. The tumor was symmetrically enlarged and he had to make two differential diagnoses between fibroids and pregnancy. He said pregnancy is not necessary to cause the breasts to secrete.

Dr. Cragin narrated two cases: one of tumor of the ovary, the other of hemorrhage into the ovary, in both of which milk was secreted.

Dr. Marx said that too much importance was attributed to milk in the breasts as a sign of pregnancy. He wished to go on record as opposing the view that milk in the breasts is a critical sign of pregnancy.

Dr. Boldt, in closing, said that he did not consider milk secretion a critical sign of pregnancy.

Dr. George W. Jarman read the paper of the evening: **TUMORS COMPLICATING PREGNANCY** with reports of cases. See page 662.

DISCUSSION.

Dr. Joseph Brettaner reported two cases of periodical hydro-

nephrosis complicating pregnancy. In one he operated at the fifth month of pregnancy as there was practically no renal substance left, the kidney was removed and the patient bore a healthy child at term. The second case was in a young woman whose appendix had been removed one year previous, but the pain for which the operation had been performed still continued. Early in her pregnancy the pain was increased and was probably due to a movable kidney with partial obstruction of the ureter near the pelvis. The patient was taken with great pain in her sixth month, and a fluctuating mass could then be felt the size of a fetal head just below the arch of the ribs. Two days later the patient went into labor and bore a six months' fetus. The mass persisted for some time, but the pain disappeared soon after delivery. Within three months the tumor had disappeared entirely, and the patient has been well since.

Dr. Cragin said that out of 2,000 cases at the Sloan Maternity but 14 had fibroids, and of these 7 had a normal delivery. Hemorrhage in these cases is due to lack of uterine contraction. Very frequently in the process of involution fibroids disappear. Three kinds of tumor seem to be the most frequent complicating pregnancy: 1. Simple cysts; 2. Dermoid cysts; 3. Congenital cystic kidney. Dr. Cragin related a case of a dermoid cyst complicating pregnancy which had given rise to a seeming puerperal sepsis.

Dr. Waldo recited a case of sepsis and peritonitis following labor in which the autopsy disclosed a ruptured pyosalpinx.

Dr. Brooks H. Wells said that it is not safe to puncture cysts of this kind through the vagina as the mortality is higher than when the operation is done from above. The cyst may be multilocular or papillomatous or dermoid, and sepsis and death will follow vaginal puncture very often. The technics of today render the abdominal operation safer.

Dr. Flint related two cases, in one of which the patient had a normal delivery and on the third day developed sepsis. She ultimately recovered and a small ovarian cyst was found. The other patient went through a puerperium, and some time later a tumor was found in the cul-de-sac. Regarding fibroids, Dr. Flint said that the results of Caesarian section, when hysterectomy

tomy is performed, are better than when conservative operations are done.

Dr. Charles Jewett said that during pregnancy, operating through the abdomen entails less danger of miscarriage than removal through the cul-de-sac, no matter how easily accessible the tumor may be. In two recent cases, pregnancy went to term undisturbed. The disadvantage of the vaginal operation is, doubtless, due to the mechanical violence inflicted upon the supravaginal portion of the cervix and the structures about it. At term, abdominal section is better than interference below, from the standpoint of infection. Uterine tumors demanding Cæsarian section also call for hysterectomy.

Dr. Kreutzmann of San Francisco said that he had seen several tumors complicating pregnancy and had noticed in ovarian tumors that the torsion of the pedicle was frequent.

Dr. A. Palmer Dudley commended the reader of the paper for insisting upon examination of pregnant women. He said that he had called attention to the danger of puerperal fever due to accident or rupture of retained foci of infection within the pelvis, years ago. Speaking of careless examinations, he said that he had recently seen two cases of supposed puerperal infection, in one of which the patient had a lobar pneumonia, in the other, an acute nephritis.

Dr. Jarman, in closing, agreed with Dr. Flint that hysterectomy was the operation to be performed when Cæsarian section was found necessary on account of the presence of fibroids.

REVIEW OF GYNECOLOGY AND SURGERY.

TREATMENT OF DIFFUSE SEPTIC PERITONITIS.

Dr. GEORGE R. FOWLER, in a paper read before the Brooklyn Surgical Society, March 1, 1900, says:

"If asked what, in my opinion, is the best general line of treatment for diffuse septic peritonitis as found to exist upon opening the peritoneal cavity, I might hesitate to express myself

as being either for or against eventration or disembowelling for purposes of methodical cleansing; as well as the employment of peroxide of hydrogen solution, or the use of large quantities of decinormal saline solution for purposes of flushing out the peritoneal cavity. But there are two points upon which I would not hesitate to speak with confidence, namely, the employment of the elevated head and trunk position, and drainage of the pelvic cavity at least by means of properly placed and protected glass drains. I offer this as a method preferable to Clark's position, which is the exact reverse of this treatement, and I do it with the full knowledge of the alleged anatomical and physiological reasons advanced in support of the last-named method. Clark's position certainly does not empty the pelvic cavity of septic fluid, for the extent to which the patient must be inverted to accomplish this is incompatible with safety, or with his comfort to say the least, since practically he must be placed standing on his head. This was demonstrated by Dr. Eastman, the resident pathologist at the Brooklyn Hospital, in a series of experiments performed upon cadavers at my request. It is fortunate for those patients who have recovered under this treatment (and I might have said in spite of this treatment) that this is true, for the reason that this would not only lead to the still further spread of septic fluids through the intestinal region of the peritoneal cavity, of itself a sufficiently dangerous area from the infective standpoint, but the septic fluids from the pelvis would finally reach the exceedingly dangerous infective area of the diaphragm, particularly the central tendinous portion of the latter, with its large lymph trunks and numerous stomata, which rapidly absorb blood, pus, and in fact fluid of whatever sort, with its contained bacteria and toxic debris, instead of being allowed to remain in or flow to the pelvic cavity, in the peritoneum of which are found but very few lymph trunks and stomata, and the capillary lymphatics of which soon become obstructed by lymph thrombi which prevent further spread of infectious material. For with the involvement of these lymph vessels the function of the latter is destroyed by the obstruction caused by thrombi, this constituting the method by which further invasion of peritoneum is prevented and the organism itself protected as

well. Under these circumstances transference of the septic fluids from the most dangerous areas of the enormous lymph sac constituting the peritoneal cavity to its least dangerous region, namely, the pelvic portion thereof, and in case of operative attacks removing these from the latter by properly placed and protected means of drainage, constitute not only a rational but an imperatively demanded procedure."—*Medical Record*, Vol. 57, No. 12.

CONSERVATIVE TREATMENT FOR UTERINE FIBROIDS.

Dr. R. A. KINGMAN, of Boston, urges the following considerations:

"Through the abdomen we ought to be able to remove simple pedunculated fibroids and fibrocystic tumors, regardless of their size. Upon this all will agree. It will also be agreed, probably, that small, subserous nodules, unaccompanied by deeper tumors, and in the absence of serious disease of the appendage, should be treated by myomectomy rather than by hysterectomy.

"On the other hand, there can be no question that in the presence of such a mass of tumors as to obliterate all evidence of a uterus; when the uterine tumors are complicated by the presence of suppurative disease in the pelvis, or by such disease of the appendages as to demand their removal; in the presence of certain grave diseases elsewhere, such as phthisis or valvular heart disease; and in patients past the menopause, hysterectomy should be the operation of election.

"Aside from the conditions mentioned above, each case must be judged upon its own merits, with the inclination always strongly towards conservatism. Especially in *young* women should our endeavors be towards the preservation of functional integrity of the pelvic organs. Neither size nor number of tumors should be necessarily a bar to this attainment, nor, in my opinion, should the fact that at a single sitting we cannot entirely clear the uterus of nodules compel the sacrifice of that organ.

"In the case mentioned as having suffered from iodoform poisoning, I believe there is now present in the uterus at least

one small fibroid, but the young lady is still at her studies, with life before her, and looking forward with fond anticipation to marriage and maternity. Rather than at once and finally to renounce such hopes, she would gladly submit to many such operations.

"As for the operation itself, the preparation is the same as for hysterectomy, and few difficulties are likely to present themselves which are not common to other abdominal operations. The chief danger, both during and after the operation, is from hemorrhage, so that careful closure of all uterine wounds must be our especial duty. The cavities left by the tumors must be sealed from bottom to top by buried sutures of catgut, any points of arterial hemorrhage being ligated with the same material. The table should be lowered to the horizontal position for a sufficient length of time before closing the abdomen to enable the operator to assure himself that all oozing is permanently checked. During the operation it is often necessary to use a rubber tourniquet about the cervical portion of the uterus, so permitting a bloodless operation, but it should be borne in mind that hemorrhage is very liable to recur upon the restoration of the blood pressure in the severed vessels, and exceptionally careful closure and prolonged inspection of such wounds is demanded.

"The frequent association of ovarian disease with fibroid tumors will make it necessary at times to resect, or do other conservative operation upon one or both ovaries, for it must not be forgotten that removals of the new growths will be followed by uterine involution and by greatly improved conditions in the appendages as well. Do not be afraid to trust nature in this respect, for it is astonishing how much she can both do and undo when given opportunity."—*Boston Medical and Surgical Journal*, Vol. 142, No. 14.

PENETRATING WOUNDS OF THE ABDOMEN.

Dr. Hugh M. Taylor, of Richmond, reports four cases and concludes:

"Even when the wound of entrance is below the umbilicus we have no symptom or combination of symptoms which enables us

to differentiate between the penetrating and non-penetrating wound *with*, from one *without* visceral lesion. The occurrence of a number of symptoms such as muscular rigidity, abolished peristalsis and shock, with reaction and succeeding shock, are strongly suggestive, but not confirmatory, and are of especial value, as when they do occur they are early manifestations. There seems to be a consensus of opinion that there are no symptoms of intra-abdominal lesion sufficiently uniform in their expression to enable us to make an early diagnosis of penetration with visceral lesion. Decidedly more exact information may be obtained by a study of the probable course of the bullet, by a careful dissection of the tubular wound tract, and on finding it to be a penetrating wound by an exploratory celiotomy. By these means only can we ascertain beyond all question the extent of the morbid lesion in time to do preventive and conservative surgery. The late symptoms, *i. e.*, those incident to septic peritonitis, are, of course gross in their manifestation and any one can make the diagnosis; but with their occurrence we have lost the key to success, an early operation to prevent acute intra-peritoneal infection.

I am conscious of the fact that able clinicians impress the idea that we not infrequently have penetration without visceral lesion. I admit such a possibility, but I doubt its frequency. Operative intervention upon all sorts of cases has saved 67 per cent., and an early operation in a series of cases should give even better results. This showing is, I think, a sufficient proof that masterly inactivity until the occurrence of symptoms of acute intra-peritoneal infection is bad surgery."—*Richmond Journal of Practice*, Vol. XIV., No. 3.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

THE VALUE OF A HEALTHY THROAT.*

WILLIAM W. PENNELL, M.D.

That a healthy throat has an inestimable value goes without saying, but our paper refers to some points wherein a healthy throat is valuable to the sick and well alike, and we hope the threshing of old straw in the quest of a few grains is permissible.

Technically, the region referred to herein is that comprising the pharynx and fauces, with particular concern touching the condition of this locality in childhood and youth. At no period in life is a healthy throat more valuable than in that between birth and the twentieth year. For it is during this time that throat diseases are more numerous, some of which have a far-reaching influence in the future history of the individual. This is when diseases having their usually most important manifestations in the upper air passages are met, such as scarlatina, diphtheria, measles, etc. It has been my experience that children with natural throats were less susceptible to such ailments; or if attacked, they had milder and shorter illness than those with diseased throats. Foremost among the diseases or conditions of the throats of children predisposing them to severer forms of disease are those known as faucial and pharyngeal tonsils or adenoids.

These growths are regarded as an indication of previous, or an index of present, poor health constitutionally. They are known to exist early in life, to persist to near the adult age and even after in some people. Their presence is an obstacle, their absence an aid, to good health. The term "tonsil" should be restricted to the small, almond shaped masses found between the pillars of the fauces, as described by the anatomist, and the en-

* Read before the Ohio State Medical Society, May 9, 1900.

largement that grows upon this site regarded and treated as a neoplasm and not simply a reaction against such irritants as bacteria and adenoids. While it may be perfectly right to classify the normal tonsil with the ductless or blood glands because of certain analogies existing between them, such as liability to hypertrophy, their larger size in children as compared with adults, their assistance in the formation of the leucocytes and sometimes their enlargement coinciding with general hyperplasia of the lymphatics, yet the analogy is not complete. We find the spleen and lymphatics enlarged with no tonsillar hypertrophy; they are not subject to similar diseases, and no harm follows atrophy of the tonsils as after atrophy of the thyroid.

Again, tonsillar enlargement is common and may be the only manifestation of disease, while lymphatic disease is comparatively rare. The two may, however, coexist. Mild forms of myxedema may be expressed by large tonsils. But the enlargement we see most seems to have a two-fold nature, being a local manifestation of a dyscrasia, or it is a sequence of a continued inflammation of the lacunæ or a folliculitis. In either case the enlargement is piled up beneath the mucosa and around the lengthened lacunæ as so many antheaps. No child can be too young for their growth; the pale, strumous ones being very liable to their development. And their presence in such children permits slight causes to produce a tonsillitis. We find them in the rheumatic, in whom tonsillar inflammation is recurrent; at times the local inflammation induces a general sepsis or rheumatism through infection from the diseased throat. In fact, these enlargements appear as open mouths, ready to drink into the body harmful influences, contagions and infections, and seem about as useless and as dangerous as is the appendix. Their situation, structure and contour make them favorable avenues for the entrance of the various infective diseases. Thus we find those having these hyperplasias more liable to the contagion of scarlet fever, diphtheria, and even of tuberculosis; and their presence in diphtheria and the eruptive diseases complicates and increases the severity of the throat symptoms. In this connection I wish to mention an

estimable fellow physician, who had "tonsils" and who had a number of cases of diphtheria; though he used every precaution at his command, yet he became infected and succumbed to the disease, though everything, including antitoxin, was used to prevent the unfortunate result. In another patient, a girl, 12 years of age, and who had enormous tonsils, there was an ordinary attack of scarlet fever. A tonsillotomy had been made on one side just previous to the development of the disease. With the period of desquamation the remaining tonsil became wonderfully larger, completely cutting off the swallowing of anything but liquids and materially interfering with breathing, so that the child had to sit bolt upright with mouth open, scarcely able to whisper, while her croupous respiration could be heard from any part of the room. The propriety of a tracheotomy was discussed with another medical gentleman, but deferred. Becoming much worse in a couple of hours, wherein the fingers, lips and face became quite cyanotic, a tonsillotome was inserted and a large portion of the obstruction removed to the relief of the patient and everybody else. I will add that this had been attempted many times before, but the resistance brought on through the sensitive throat prevented what the benumbing influence of cyanosis permitted.

In the chronically enlarged tonsils the cheesy formations in the crypts and lacunæ, with their horrible odor, we perceive a menace to health. The swallowing of these masses with their germs and their toxins has a deleterious effect upon the stomach. We find these patients do well after the tonsils are removed. Likewise these enlargements interfere with the nose, giving it a narrow appearance by obstructing the nasal passages much after the same manner they induce a peculiar conformation of the chest. So, also, further irritation and modified movement of the throat results from adhesions between these growths and the faucial pillars.

Fortunately for many who retain these enlargements, there comes a time when they atrophy and their harm ceases, except the organic changes they induced previously. In some they persist through life, being a true hypertrophy.

Look at the child with large "tonsils." He is pale and usually

feeble. He differs from other children because he swallows large quantities of catarrhal discharges loaded more or less with toxins and fetid exudations, which, in turn, cause his gastric disturbances. His sleep is distressed with night-terrors and accompanied with an uncomfortable snoring—the extra exertions of his respiratory centres contributing to his debility, no doubt. In addition to his liability to conjunctival and corneal inflammation as well as orbital thrombosis, his breath is foul, voice is thick, and he has faulty articulation through interference with the movements of tongue and palate. Very often he becomes a mouth breather. Is it any wonder he becomes anæmic, his unhealthy throat aid in his general physical impairment?

Similar to the harm from these faucial enlargements is the detriment to the health from the lymphoid overgrowths, adenoids or papillomata to be found in the pharyngeal vault. Their position as regards the nasal chambers and the eustachian tube will interfere with the normal state of both ear and nose. If the tube enters the pharynx high up, a small adenoid will block it; it will take a larger growth to exert mechanical pressure when the tube enters low down. In either case pressure on the tube interferes with the return circulation of blood in the ear by bearing upon the veins in the vault of the pharynx.

Then there are the catarrhal conditions these adenoids produce that find their way into the eustachian tube, blocking that important canal with mucus and disturbing the equalization of the internal and external air pressure with consequent retraction of the drum head. Later the catarrhal disease extends to the ear itself with additional defects of hearing.

These overgrowths often coexist with tonsillar enlargements, so that a tonsillotomy may give negative results if the former are not removed also. They are said to disappear about the 19th year, yet a patient of mine, 50 years old, became quite deaf from their cause, but removal restored the hearing. Their effects do not stop with the ear; they reach into the nose and to the eye. I remember two little girls, one five, the other six years old, with adenoids. One had relapsing conjunctivitis, the other recurrent phlyctenular keratitis; after the growths were removed the other difficulties vanished. Another had paralysis

of accommodation following an attack of pharyngeal diphtheria. These are a few of the cases that might be mentioned. In looking the list over a large percentage had defects of speech, through the interference these growths had with articulation. Removal or absorption when this symptom becomes very pronounced does not restore the voice, since a long acquired habit is scarcely remedied by training. I remember two boys over six years old whose speech was greatly at fault, wherein the best results followed removal of the growths.

Like faucial enlargements, adenoids are often an expression of a dyscrasia; and they just as illy prepare a child for scarlet fever, diphtheria, measles, etc., for these acute troubles find a fruitful field whereon to plant chronic disease. All physicians should be alive to these matters. Once discovered, let them be dealt with without delay, because they are always a menace to the present health and a hindrance to future welfare as well as development of faculties.

We know the child with these overgrowths when he comes into the office. He is often a mouth-breather with imperfect expansion of the lungs, because insufficient air is inhaled to properly oxygenate his blood. His mother assures us his stomach and "liver" are bad, or he has "worms," because he has a poor appetite, is drowsy, seems weak, and has restless sleep. On inspection we find that non-use of the nostrils, due to blocking of the pharynx, has made the nasal membrane unhealthy; he has headache, is fretful and of a sullen disposition.

In the very young, teething is retarded because of poor health and there may exist facial spasm. In older children we notice the intellect is dull, the voice has lost its resonance; in those older yet, the juvenile voice may persist and cannot be made to receive culture as in other children. This is the case often after absorption in adolescence, or their late removal by the surgeon. A child with adenoids is apt to be apathetic, dull of comprehension, and not at all the peer of his fellows, physically or intellectually. The overgrowths have handicapped him during childhood and youth, and now as man some of their effects remain as a permanent heritage.

Fredericktown, Ohio.

COXA VARA.

CHARLES F. PAINTER, M.D.

I will report three cases of deflexion of the neck of the femur which present interesting conditions anatomically and also illustrate the value of careful investigation for the cause of a limp. Two of these cases had been erroneously, or at least imperfectly diagnosed, with the result that the prime cause had been missed. The third case was one where the deformity was extreme and was the only operative case of the three.

When this condition was first described it was supposed to be of a rachitic nature, of late development, and all the early described cases were deformed in one direction, that is, the neck of the femur was bent downward. Further observation has demonstrated that there are a great many possible combinations of deflexion and that they are very rarely uncomplicated or in a pure form. Sometimes with the simple flexion of the neck on the shaft there is anterior or posterior displacement and various combinations of this amounting to torsion in some patients.

The majority of the cases first reported were developed in young adult life, but this series shows quite conclusively, in these cases at least, that there may be a development of the condition in infancy, for in two of these patients there is a definite rachitic history during infancy and a limp during childhood.

CASE I.—M. M., aged 16½ years, is a stout, healthy country girl who comes to the clinic because of pain in the small of the back between the shoulders and also over the right trochanter. On physical examination it was found that there is a prominence of the left hip and the right scapula, a long sweeping curve of the spine with convexity to the right and a slight amount of rotation. The spine was flexible and on examination of the legs I found $\frac{3}{4}$ of an inch shortening of the right leg without atrophy; abduction restricted; other motions at the hip normal; trochanter slightly above Nêlaton's line. The mother states that the patient has had a peculiar rolling gait ever since commencing to walk. As a baby she was very delicate and was treated for rickets at the Massachusetts General Hospital. The head of the femur was in its socket. This case had been treated

with traction in bed for hip disease, but had not been treated for the only feature which was of any consequence and for which treatment was indicated; viz., a scoliosis due to the shortening of the leg.

CASE II.—This case is a boy 15 years of age who is the picture of health. One year ago, while camping in the woods, he sprained his left thigh and knee, while running, which resulted in some synovitis of the knee and painful sensation of strain of the anterior thigh muscles and of the structures in the popliteal space. Gradually this improved, but left him slightly lame. After the first strain similar conditions occurred more frequently. The family state that he has always had an awkward gait.

On physical examination the left leg is one inch shorter than the right, one inch atrophy of the thigh, and flexion to a right angle without spasm. Flexion beyond a right angle is accomplished only with abduction. No abduction possible in flexed position. On account of fat it is impossible to establish Nélaton's line. Inward rotation slightly limited; outward rotation equal on the two sides. In walking the gait is quite stiff. The X-ray shows a downward bending of the neck of the femur. An interesting fact in taking the X-ray was that it was very difficult to secure a shadow of the bone, probably on account of the decreased osseous density and the fleshiness of the thigh. This case had been treated for synovitis of the knee and it was the tailor who first detected the shortening of the limb.

CASE III.—This patient is a girl 12 years of age. One sister had rachitis. At 1 year of age began to walk and ever since parents have noted a peculiar gait. Of late a very marked lordosis has been noted. The patient is a healthy child, walks very stiffly and complains of pain in hips and back. Can not separate internal malleoli more than 3 inches. Impossible to abduct the thigh. The inner surfaces of the thighs at the line of the perineum can not be brought nearer than one inch from each other. No abduction possible and rotation limited.

Both femurs were chiselled through where they bend to give off the neck and the bone incision was carried into the neck.

The femurs were then extremely abducted and left in a plaster spica with the interior malleoli 27 inches apart.

The gait was very much improved. On removal of the spica the fractures were thoroughly united and the position of the legs was very much better, and even before her discharge from the hospital she could walk very much better and did not tire as formerly. Before the operation, while in school she had permission from the teacher to get up and walk about the room whenever she wanted to do so. This was necessitated by the fact that her extreme lordosis tired out the lumbar muscles and made a change in position imperative. She had to get up two or three times in the night for the same reason. This had been completely relieved by the operation.

This case is, of course, one of the most extreme, and illustrates the type in which operative interference is indicated. The reason for the interference is to overcome a mechanically faulty anatomical arrangement. The second case is one in which operative interference is being considered, and the first case was one in which the secondary scoliosis was demanding treatment which was directed toward correcting the primary cause of the curvature; viz., the shortness of the limb.

It is to be borne in mind that with this faulty joint at the hip, strains and sprains may more easily occur than in normal conditions and that such strains often closely simulate hip disease, or as in our second case a synovitis at the knee. These deformities also by interfering with free locomotion interfere very seriously in certain cases with the general health of the patient, which with symptoms which might suggest hip disease combined with a cachexia heightens the likelihood of a tuberculous hip trouble. There have been three or four such cases under observation at the clinic recently where the diagnosis of hip disease had been made and later abandoned for that of coxa vara, which was the correct one. These facts should lead us to bear in mind in examining hip cases that all are not tuberculous that limp.

372 Marlboro Street, Boston, Mass.

SELECTED PAPER.

THE SCIENTIFIC EXAMINATION OF A CHILD.*

DR. E. P. DAVIS, PHILADELPHIA.

When we approach a child we are in the presence of an extraordinary and difficult problem. No human child is born without transmission of distinct tendencies and hereditary characteristics. There are two ways of approaching the child. First, a way that is too habitual, is to look upon the child as the recipient of medicine, and possibly through its parents as the source of fees. The commercial practice of medicine is common throughout a proportion of physicians, I am sorry to say. The other method of approach is to consider carefully what manner of being it is, to see in what particular this child differs from the normal, how much can be controlled, how much is due to distinct pathological processes. It requires a considerable amount of intelligence on the part of the parents, which is often wanting. When we speak to you on the study of pediatrics, we take it for granted that you desire to conduct your study and practice on these latter principles.

When you come to the question of heredity you have to proceed judiciously. You cannot ask the parent, "Have you been a drunkard?" You have to infer, and judge many things from the physical marks. You can get the tubercular or neurotic history. Remember no one is ashamed of tuberculosis or nervous prostration. When it is a question of the transmission of syphilis, you must infer rather than question. Some will confess to you a history of alcohol.

Next to heredity is the prenatal condition; the health of the mother before the child's birth and other conditions making themselves felt on the unborn child in a remarkable manner. Then comes the general history of the child, whether the mother has nursed the child, whether the child has had any severe illness. There is the recent history—and long before this you have opened the flood gates of maternal conversation. Much of the conversation in getting the history is really an opportunity for

* Abstract of a lecture delivered before Woman's Medical College, Phila.

you to study the infant, and while she is telling you her story, the child is telling its own, in some way or other, just as is stamped on every adult its own physical condition. The child is perfectly fair with you, and tells you no lies.

How shall you proceed to examine the child? In eliciting its history you must bear in mind these three stages: First, the period of nutrition; second, the period of dentition, and then the question of the presence or absence of any infective agent.

Few of us have perfect vision, we cannot observe accurately and truly. When you come to observe the child the first thing to be noticed is its apparent size; "apparent size," I say, for it is so wrapped up in dry goods that it is a difficult matter to tell its actual size. And this brings up the fact that you should remove these wrappings so as to come within at least one of it. A certain bulk is necessary to health, and the child should be plump; but the child in health is not flabby, and when we speak of apparent size we must use a discriminating judgment.

In regard to color; now as our country seems to be extending, we have white babies and black babies, and yellow babies, and when we have jaundice in babies it exactly simulates one of the normal shades. For a pathological variation witness the earthy color of syphilis compared with the rosy color of the healthy child. Observe the posture of the child—a rare thing for the physician to observe. Remember that when within the womb the child to accommodate its bulk assumes the position of flexion. The amniotic liquid enables it to move, although it retains the position. The first few weeks after birth it retains this intrauterine position when laid on its back in a warm comfortable room, and moves itself about, there are certain peculiar postures which are certainly suggestive. The hands are prehensile, the feet also; the toes will distinctly curl down, over one's fingers, and you are reminded of the generations through which it has come. It is perfectly natural and logical, and no reflection on the baby. It is better to have come from a monkey than to have fallen down from an angel. Things are getting better, and they must get better.

Then comes the expression. The child has an expression, physical and not mental. The mental is one of the charms of the

adult face that cannot be in the infant's. This resembles the uncut gem, while fully developed character is the jewel. The expression of the infant is a direct evidence of its physical condition; witness the happy face of the healthy child, the sorrow and anger of the colicky child and the indescribable pathos of the dying child.

The child's pupil is small; it is not mobile at first. As the child grows the pupil opens, and the child begins to perceive, having at first only seen. It is a mistake to think the eyes should have no light. Accommodation is not developed; it is proper to shade the eyes; but not to keep them in a darkened room.

How much does the baby weigh? That depends on who answers the question. The grandmother calls it two and a half times as much as it really is. If the great grandmother answers, it is infinitely enlarged. The nurse tends to favor the parents. The doctor is apt to be reserved and will only say in pounds and ounces. What are the ranges? We find the range is from 717 grams to 6,123; that is a baby weighing 717 grams has lived and grown up, while the largest baby that lived was 6,123 grams. The smallest I have seen was a little girl that weighed $2\frac{1}{2}$ lbs. She is now five years of age, and in as splendid health as anyone. I have seen several $3\frac{1}{2}$ lb. babies live. When we get up to the other extreme we find that the largest baby that has been seen weighed 11,300 grams. Of course that is tremendous. The largest Cæsarian baby I have seen weighed $9\frac{1}{2}$ lbs. How do we account for this great range in weight? One thing is the condition of the mother. A poor starved mother cannot produce a large healthy child. The infantile nutrition is always in excess of the maternal. The child's blood is always richer than that of the mother.

How many babies die? About 39 per cent. die before they are one year old according to some statistics. This seems large, but it is a question whether it is far from the truth. Through Europe there is a mortality among infants of from 25 per cent. to 40 per cent. In this country it is probably smaller for some reasons. Causes influencing the general development are first the youth of the mother. A woman who is too young for all the strain of child-bearing has a weak child. This is seen in the

mother of fifteen with the very feeble child. To give them the greatest possible advantage a woman cannot bear children before the age of twenty-three or twenty-four. There is the influence of legitimacy or illegitimacy. We are familiar with the influence of the shame which the mother is called upon to bear. There is the question of nutrition. Was the mother starved, either through her own laziness or through want? Times of famine, war, pestilence all show their influence on the development of children. Then there are the infections that sweep over the country. The fortunate thing is that the more acute an infection is the less pain it brings as a rule. I spent a delightful ten days with pneumonia, highly delirious, driving a pair of better horses than I shall ever have.

Another influence—we have sweeping over the human family the process of degeneration. This is the conservation of human energy. It is inevitably seen that it is impossible to produce a breed—a royal family—for generations without the crazy king, the drunkard, and then the strong man coming from the woods to seize the crown. So the processes of degeneration are the greatest rebuke to human pride and a notable factor in the development of the child.

Here we have a baby for inspection. Its "apparent size" is about its actual size, for it is not burdened with wraps. The complexion is clear for one of this race. There is that in the contour of the cranium and face which is distinct evidence of its race. And here is a faint suspicion of an abnormality; note the contour of the dome of the head with the thicker bone. The posture is one of a child in comfort. The breathing is natural and it looks about without seeing anything. It is easily hypnotized or attracted by bright objects such as spectacles. If you watch the posture of its arms they are neither above the head nor clenched in toward the body nor extended down, but moving about near the waist. When you come to the lower extremity you will observe that the toes are just as prehensile as the fingers, and it is simply a process of evolution that the toes are shorter. The limbs are in a position of comfortable flexion. You may see them draw up, indicating peritonitis or abdominal pain, or you may see them extended straight.

There are a few things we should tell you as regards proportion. The length is fifty centimeters; and it has two other dimensions which are proportionate—they are the circumference of the head and the circumference of the chest. We find the chest to be one-half the length of the child plus ten. If the length, then, is fifty, the chest circumference should be thirty-five. The head is bigger around than the chest because the child should have more brains than wind. So you add two or three centimeters to the chest circumference, making it about thirty-eight. These proportions are maintained throughout the early development.

There is another interesting thing about the child, the question of its reflexes, indicating the way it gains knowledge of the outside world. If you accustom yourselves to observe posture and appearance you will see that the moment disease attacks the child there is an expression of it. How far could we go without any history of the child? We could get a perfect history of its condition without a word from anyone. You must appreciate the fact that a child can breathe with its mouth closed, and that motion is the normal expression of young protoplasm.—*The Medical Times, May, 1900.*

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, April 10th.

THE PRESIDENT, DR. ALFRED STENGEL, IN THE CHAIR.

SYMPOSIUM ON DISEASES OF THE HEART IN CHILDHOOD.

Dr. Alfred Hand read a paper on "The Pathology of Congenital Heart-Disease."

Many classifications have been suggested, none being perfect. As a good working basis Osler's is useful, which divides the lesions into (1) those due to faults of development, (2) those due to fetal endocarditis, (3) those resulting from a combination of both. According to Peacock, hearts with two or three

cavities result from defects occurring before the sixth week; septal defects and misplaced vessels arise between the sixth and twelfth weeks, and anomalies of the valves and persistence of fetal openings occur after the twelfth week. The causes of endocarditis in the fetus are: Infectious fevers in the mother, especially rheumatism; syphilis; it may occur without illness on the part of the mother; micro-organisms may penetrate the placenta, or toxins may pass from the mother to the fetus and cause the inflammation. Favoring the latter view is the form of the endocarditis, which is always sclerotic or chronic, and not warty. Reasons for the inflammation affecting the right heart oftener than the left are that congenital anomalies are more common on the right, there is more work to be done, and oxygen is present in greater amount in the blood on the right. With the exception of the first reason the others apply to postnatal endocarditis, which is more common on the left than on the right. Some of the lesions were then discussed, Holt's tables being quoted, which place defects of the ventricular septum as the most frequent, followed by defect of the auricular septum and pulmonary stenosis.

J. Dutton Steele discussed "The Pathology of Acquired Heart Disease in Children."

The hearts of children respond quickly to demands upon them, and hypertrophy is quick and considerable in amount. Also, as the tissues are more yielding, dilatation occurs easily. This is due to the general tendency of the child's tissues to adapt themselves to changed conditions and to the absence of degenerative changes. Acute rheumatism is more apt to affect the heart in children than in adults, and is oftener a primary manifestation of the rheumatic process than a complication. The most serious lesion as far as the immediate outcome of the attack is concerned is a myocarditis of the infectious type. Endocarditis is important chiefly in respect to its more remote effects. A pancarditis is probably the most frequent form of rheumatic affection of the heart.

Puerperal infection in the new-born may cause peri-, endo-, or myocarditis.

Acute infectious forms are a frequent cause of heart disease

in children. Here also myocarditis is most serious as well as most frequent. When the peri- or endocardium is affected it is as a part of a pancarditis. Diphtheria affects the myocardium especially, rarely the serous membranes. Scarlet fever also causes a myocarditis, and sometimes pancarditis and endocarditis as well. Scarlatinal nephritis usually produces hypertrophy and often dilation of the left ventricle. Rhachitis sometimes causes hypertrophy of the right ventricle. The remote effects of the congenital lesions are hypertrophy, and dilation usually of the right side. Such anomalies appear to render the heart a point of lesser resistance to infections.

The three forms of myocarditis of most importance in childhood are: 1, the acute infectious; 2, the suppurative, usually produced by infective embolism; and 3, the chronic interstitial oftenest caused by syphilis. Quick response to stimuli, ability of the general nutrition to recover itself, and the absence of changes in the coronary arteries render the heart in children much more liable to hypertrophy than in the adult and makes compensation much more thorough. Dilatation is almost always present as well. The right ventricle is relatively oftener enlarged than the left. The reason for this is the absence of arterial sclerosis and the rarity of aortic stenosis in childhood.

Pure dilatation is rare. Failure of compensation is not common in childhood. Acute endocarditis affects the mitral valve in a great majority of cases. The relation of aortic disease to the mitral in adults is 32 to 22; in children, 11 to 2. When embolism occurs it is usually in the *arteria sylvii fossæ sinistra*. Of the chronic changes in the heart valves mitral regurgitation is first and mitral stenosis second in frequency.

Dr. F. A. Packard read a paper on "The Symptomatology of Heart Disease in Children. Stress was laid upon the absolute absence of characteristic symptoms of valvular disease in children and the fallacy of depending on any means of diagnosis in this condition, except that by physical examination. A summary was given of the statements made by various authors to this division of the subject, and an analysis of 56 cases in regard to the frequency of the various symptoms was made.

Dr. J. P. Crozer Griffith discussed the diagnosis of heart disease in children.

Dr. Meigs, in discussing the prognosis, stated that in general it is better than in adults, because the tissues of children are less stiff and more readily undergo repair. Cardiac disease may even disappear in some cases in children, and the prognosis, generally speaking, is more favorable than in older persons. The prognosis should be bad or good, according to the presence or absence of involvement of other organs than the heart in the disease. If the other organs are healthy the prognosis is good, but if other organs are diseased the prognosis is consequently bad. As to changes in the heart itself he had found that in the cases with great cardiac enlargement the worst prognosis should be made. The character of the murmurs is a matter of relatively little importance in prognosis. He spoke of two cases in which he had observed the disappearance of organic murmurs; in one of them heart disease followed an attack of measles in a child 8 years of age. Now, 26 years afterward, the patient shows no sign of cardiac disease. In another case after chorea there was a murmur, which seemed organic, and great irritability of the heart. The patient is now 23 and has no murmur, but still some cardiac irritability. He emphasized the fact that patients with heart disease may have long lives. One patient whom he had observed for years, and who died when over 70, was said to have had cardiac disease since early childhood. A woman whom he had attended had cardiac disease since her early childhood and died when she was over 50.

Dr. Hare, in discussing the treatment, first noted that children are oftentimes entirely free from symptoms even when organic heart disease is present, and that, therefore, treatment is often superfluous. When treatment is necessary he considered that rest constitutes, in importance, about three-fourths of all management. He disbelieved in the attempts which are often made to encourage the growth of these children. The stunting is a compensatory process to relieve the damaged heart from as much work as possible, and it should therefore not be interfered with. He considered puberty a particularly dangerous period for these children, and insisted that rest is very important at

that time. Among drugs he considered alteratives the most important, and thought that arsenic was most valuable, chiefly through its action upon the blood. Anemia is frequently the most important symptom present, and through the improvement of the blood and of the general nutrition of the body arsenic has a valuable influence. The bichloride of mercury in doses of 1-1000 to 1-3000 of a grain is also valuable. The use of cod liver oil he discountenances, as a rule, because it is likely to increase the accumulation of tissue and particularly of fat, and thus damages the heart by increasing its work. As a rule, he considers hematics the most important drugs. Digitalis, he insisted, is used in too large doses, particularly in children. It is likely to show its bad effects more readily in children than in adults. When it is given, he recommended that very small doses should be used, 1 to 2 minims or less, unless an emergency should demand larger doses. Also, it should be given for a few days and then stopped for several days, to be resumed again. Its action persists sufficiently long to make this method of dosage all that is necessary, and its continuous use is fruitless and likely to be harmful. Strychnia he also considered a seriously abused drug. Temporary good effects are sometimes seen from the use of strychnia in heart disease, but its effects do not last, and increased doses are then necessary, and this ultimately causes severe general nervous irritability of the heart with other tissues. He mentioned the case of a child that had a pulse of 160 of irritable character with slight persistent temperature following typhoid fever. The child had been on doses of 1-30 grain of strychnia four times a day for a long time, and when the strychnia was stopped the pulse rapidly decreased to normal and the temperature soon disappeared. He stated that strychnia is a whip to the heart, and not a tonic. As to alcohol, he considered that it is rarely necessary in heart disease of childhood.

Dr. Stengel: The discussion has been of great value in directing attention to the peculiarities of cardiac disease in children. The descriptions that are found in text-books on diseases of children are oftentimes incorrect and confusing because the experience is derived to a considerable extent from the study of adult cases. The symptomatology especially, as Dr. Packard has said,

is frequently very obscure in children. One symptom which I have found to be very common and striking is a peculiar listlessness and disinclination to play. In boys there is often a tendency to become very girlish in manners and in the forms of their diversions; they are likely to play with girls because the sports of other boys are physically too severe for them. They may even take up needle work and similar amusements. Mitral stenosis particularly has in my experience often been associated with hypoplasia, and in boys with both physical and mental femininity. To my mind the most striking symptoms of cardiac disease in children is the general behavior of the child. Dr. Griffith has spoken of idiopathic edema of childhood, and I agree with him that this is a common condition, but it is always well in such cases to be on the lookout for obscure cardiac disease. One case which I have observed both at the Children's Hospital and the University Hospital had pronounced edema, which was so far as we could determine without organic cause. There were no signs of cardiac disease for a long period, but ultimately cardiac disease was discovered. It is not improbable that a considerable number of cases of idiopathic edema in children are the result of obscure cardiac disease, which at the time of observation was undiscoverable. As to the treatment I fully agree with Dr. Hare that digitalis is greatly abused, and that it is, as generally used, more likely to do harm than good. Indeed I have seen few cases in which it did good, while I have observed a number of instances in which serious harm resulted from its use.

Dr. A. E. Roussel: There are many points of interest in the papers read this evening, but lack of time will permit but the discussion of one or two which have particularly attracted my attention.

Regarding the statement of Dr. Steele that he has been unable to find any record of cases of ulcerative endocarditis following measles, I would state that such cases do exist and are probably more common than given credit for. Dr. Meigs has mentioned one such case this evening and I recollect at least one other.

A young woman, about 18 years of age, was admitted under

my care at the Harvard Hospital this winter with the following history: Some three weeks previously she had a severe attack of measles, and after having entered into convalescence was suddenly seized with severe chills, followed by fever sweats and marked prostration. After further treatment by the family physician for about two weeks she was removed to the Hospital, where she died within 36 hours. The autopsy confirmed the Hospital diagnosis.

The diagnoses of these cases is by no means easy, especially when, as mentioned by one of the speakers, the murmur may be absent until late in the disease. Last winter I treated a case of this kind at the Medico-Chirurgical Hospital.

A boy, about twelve years of age, had entered into convalescence after typhoid fever and had a normal temperature for about a week, when he was taken with a series of chills accompanied by an intermittent fever, sweats, etc. This continued for about two weeks, during which time no cardiac murmur could be detected. The spleen now commenced to enlarge until it reached as low as the level of the umbilicus, and about one week before death the heart murmurs appeared. Autopsy showed a beautiful specimen of ulcerative endocarditis, and infarct of spleen.

My experience differs from the views expressed by Dr. Meigs concerning the rather favorable prognosis of valvular diseases in children. It is my observation that most of those afflicted in this manner are apt to die at about the period of puberty. Not only is the compensative hypertrophy and subsequent dilatation a much more rapid process in the young, but it is at this time that additional demands upon the heart are made by the system, and as a rule this organ is not equal to the strain.

And again I must confess myself rather sceptical concerning the total recovery from a previously well-defined case of valvular disease of the heart. Doubtless many previously existing murmurs disappear, but given such a murmur with definite existence of cardiac hypertrophy as corroborative evidence, the restoration of such a condition to a perfectly normal heart must be very rare.

Dr. Robertson: I have recently observed a peculiar form of

dyspnœa in a case of acute endocarditis which arose after exposure. The patient presented first a mitral regurgitant murmur, beginning 36 hours after the onset of joint involvement; this latter, as is often the case, being insignificant in character; 36 hours later there was a murmur of mitral stenosis. The peculiarity of the dyspnœa was that while the child was usually breathing from 60 to 80 times in the minute, its respirations would suddenly run up to from 105 to 110 a minute, the rapid respiration not being accompanied by any signs of distress and being therefore not a real dyspnœa, but a condition that may be likened to tachycardia, and is well described only by the word tachypnœa.

Dr. Meigs: Apropos of the mention of the occurrence of edema from obscure cause, I would speak of a case which I saw years ago in a child between 1 and 2 years old. The baby had had summer complaint, but had improved greatly when edema of the feet and ankles appeared, and became so marked as to cause extreme distension of the skin. It was a strikingly hard form of edema which did not pit on pressure. The boy recovered entirely from this and is now 14 years old; is thoroughly well, and engages in trying athletic games. He has never been very ill since and has never had any evidence of heart disease, and heart disease cannot be said to have caused his edema. The case is a confirmation of the statements of Dr. Griffith and Dr. Stengel and others that edema may appear in childhood and not be traceable to any organic cause.

Dr. Hare: I can confirm Dr. Meigs' statement, that many of these cases have very long lives. One case, for instance, that I have observed is that of a man of 57 who had scarlet fever at 7, and probably had endocarditis at that time. At any rate, he says that he has been told since his early childhood that he had organic disease of the heart, and he certainly has it now. He has been strongly addicted to alcohol and has led a hard life, but in spite of this, he has fair comfort and has lived, as I said, to be 57 years of age. Another man whom I have observed, and who is now over 60, has had mitral stenosis probably since his early childhood and suffers no inconvenience from it. These are exceptions, however, and children with cardiac disease are likely

to get along fairly well until they are 9 or 10 years old. They oftentimes begin to show distress at this time, and in later childhood, about the period of puberty, they become seriously distressed and oftentimes do not reach adult life.

Dr. Griffith: I wish to say only a word concerning prognosis. The general impression left by the previous speakers is that these children are extremely likely to die at puberty. While this is oftentimes the case, it is certainly erroneous as a general statement, for large numbers of children with organic disease of the heart pass through puberty without serious trouble. That many of them do survive puberty, is shown by the statistics which Dr. Osler collected concerning complication of chorea with heart disease. Certainly the larger number of cases which he reported, in which chorea had been complicated with heart disease, developed their chorea in early life, and hence the heart disease also. Nevertheless many of these patients when re-examined had gotten years beyond puberty without any grave distress. This is certainly evidence that very many cases of cardiac disease may pass puberty safely.

Dr. Robertson: I have observed one case of interesting edema in a child between 2 and 3 months of age. The infant was overfed and had an acute enteritis which had persisted for 3 weeks, in spite of treatment. An edema of the face, hands and feet then appeared, which was of the same curiously hard character as in the case mentioned by Dr. Meigs, and did not pit on pressure. There was no heart lesion evident, and I had the urine collected and examined it. It showed a good deal of albumin with hyaline and hyalo-epithelial casts and renal cells, and some leucin and tyrosin. The child died soon after of exhaustion. The post-mortem showed no macroscopic kidney lesion and no heart lesion. There was, however, an infarct in the lung, and cultures from this infarct, from the spleen and from the heart blood showed a streptococcus. The case was undoubtedly an acute infection, and I think there was probably a nephritis which would have been evident upon microscopic examination, but was not apparent to the naked eye. Notwithstanding the diarrhoeal trouble, there were no gross intestinal lesions post-mortem, thus seeming to indicate an effort on the part of the bowel to throw

off the poison. This, also, is an example of the fact that leucin and tyrosin may be found in other conditions than in acute disease of the liver.

Dr. Hand: I have often been struck by the general appearance of children with cardiac disease, but the characteristic which has seemed most pronounced to me has been more than the restlessness of which Dr. Stengel spoke. In a number of cases it has been more of a mental antagonism toward its caretakers, an unwillingness to be cared for which often makes it difficult to manage the cases properly. This irritability seems to me a symptom of some importance. Digitalis, as Dr. Hare and Dr. Stengel stated, is likely to do no good, and often does harm in some cases; but in dropsical cases I have seen it do good. In one case in which there was enormous dropsy I gave digitalis, and rapidly ran the dose up to 30 drops of the tincture 4 times a day with strikingly good results. The dropsy vanished with astonishing rapidity and the boy regained comfort. I have seen one case in which the signs of organic disease of the heart apparently disappeared. The child was first observed in 1892 at the Children's Hospital. She was anemic, had repeated nose bleed, and a mitral regurgitant murmur with enlargement of the heart, the diagnosis being confirmed by several observers. The child was sent to the country and disappeared from observation for some time, but some years later was seen again and had absolutely no evidences of cardiac disease.

BOOK REVIEWS.

Essentials of Medical Diagnosis. By Solomon Solis-Cohen, M.D., and Augustus A. Eshner, M.D. Second Edition, revised and enlarged. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1900. Price, \$1.00 net.

This is another of the popular question compends of this publisher which have gained such a wide circulation. The authors are men of high standing in Philadelphia in this branch of medicine, and they have done their work well. The older methods of written lecture notes seem to be passing by. Far more satisfactory are these little volumes which contain the essentials and by means of fine printing, paragraphing, typography and illustrations, serve to call to the student's mind that which he has heard in didactic or clinical lectures or been told at the bedside. The busy practitioner, too, finds them not infrequently a convenient way of gaining information for which he has not time to search in larger treatises.

A Handbook for Nurses. By J. K. Watson, M.D. American edition under the supervision of A. A. Stevens, A. M., M. D. Published by W. B. Saunders, 925 Walnut St., Philadelphia. 1900. Price \$1.50 net.

This neat little volume aims to gather into one book all the essentials of the medical knowledge which a trained nurse must have. Doubtless there should be lectures and other larger textbooks. But the things herein contained she should know and may review as often as her duties will allow. Not much space is devoted to nursing *per se*; evidently that must come from practical experience with patients under competent head nurses and matrons. We believe the book will have a wide circulation among pupil nurses.

Scattered Leaves from a Physician's Diary. By Albert Abrahams, A. M., M. D. (Heidelberg), F. R. M. S., San Francisco, with frontispiece. Published by the Fortnightly Press Co., St. Louis, Mo. Price 50 cents.

This is a series of sketches, mostly of a satirical style. The Young M. D., The Scientist in Love, The Bacteriologist, The

Abortionist; these are a few of the many characters brought out with a keen sarcasm which holds the attention closely to the end.

The Doctor writes easily, his dialogue is quite natural, his descriptions good and the moral of each sketch is evident without being in any case pointed out by the author.

The International Medical Annual and Practitioners' Index. Eighteenth year. Published by E. B. Treat & Co., 241 West 23rd Street, New York City. 1900. Price \$3.00.

The volume this year is about the usual size, 750 pages. The contributors have been considerably changed. Twelve men who wrote for the 1899 volume do not appear in this volume, but their places are taken by twenty-one others. Among these last we notice Drs. Henry P. Loomis, Thomas Moore-Madden, Joseph McFarland and Boardman Reed.

Among those names which re-appear are Chapin, Purrington, Fenwick, Hammond, Priestley and Thompson. With such helpers, of course the results are almost beyond criticism. The whole range of medicine and surgery is covered, and the publishers claim a larger amount of original material than has ever appeared in any such volume. So far as one can judge, their claim is well sustained. French, German, English and American journals have been consulted by the collaborators. This international character of men and writings yields a volume of singular fairness and authority. Not even our great weeklies can follow all the journals of medicine. But here we have the best from the best by the best.

Elements of Clinical Bacteriology. By Ernest Levy and Dr. Felix Klemperer. Second revised and enlarged edition. Authorized translation by Augustus A. Eshner, M. D. Published by W. B. Saunders, 925 Walnut Street, Philadelphia. 1900. Price \$2.50 net.

This is the latest volume in the series of books of which Abbott's Hygiene of Transmissible Diseases and Heisler's Embryology are previous examples. It is, so far as we know, the only example in English of its kind. The two authors are well known in the University of Strasburg, while the translator holds

an equal eminence in Philadelphia. It is only quite recently that the clinical side of this science has been realized. We are but just beginning to realize how much real help the clinician may get from bacteriological examinations and tests. That they are not always completely reliable we all know. The medical man cannot neglect his other means of diagnosis and rely wholly on the culture and the microscope. We have here gathered together the best of what might be found in an exhaustive system of medicine only brought strictly up to date, and with an abundance of the most modern technique and illustrations, such as no system of medicine contains. It is, indeed, as the title asserts "for physicians and students." We see a wide field of usefulness open before it, and predict a large circulation.

It is divided into parts. Part I considers general subjects such as infection, immunity and cultures. Part II treats of inflammation and suppuration as they appear in all their varied external and internal forms. Part III takes up in turn, each of the specific diseases of bacterial origin. Part IV finishes the subject by a presentation of the mycoses, of which infections malarial is a type. Then in the appendix there are directions for the examination of soil, air and water and for disinfection. If your library is large enough you can find in it, by careful search, most of all this material. But the search will be a laborious one. But here it is right at hand, and presented in a form of excellence unrivaled save by the other books of this same series.

Bee Line Therapia and Repertory, by Stacy Jones, M. D.
Second Edition. Published by Boericke & Tafel, Philadelphia, 1899. Price, \$2.00.

This is a neat little gilt edged, flexible covered morocco bound book, of the size adapted to the pocket, which will prove of much value to those of our readers who practice homeopathy. It is arranged and printed like a dictionary. Diseases, symptoms and remedies are arranged alphabetically and each important heading carefully subdivided. Treatment is indicated by abbreviations which are well indexed at the back. Thus, in two minutes after seeing a patient, with this book at hand, the merest tyro in medicine can wisely and carefully prescribe,—a most convenient system of therapeutics surely.

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ORIGINAL COMMUNICATIONS

ASEPSIS IN OBSTETRIC PRACTICE.*

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Before the days of antiseptics the mortality in childbirth was very high. The average death rate in the Maternity Hospital of Paris from 1860 to 1864, was eleven per cent. From 1861 to 1877 there was in Berlin, one death from puerperal fever in every one hundred and seventy-eight confinements. Outside of the Capital it is said the mortality was much greater. With the beginning of aseptic practice in midwifery in Russia, the puerperal mortality was reduced to 58 per cent, an improvement of $27\frac{1}{2}$ per cent over the previous death rate. Dr. Semmelweis, of Vienna, the father of aseptic midwifery, pointed out in 1847, that puerperal fever was due to infection, and "succeeded in reducing the mortality by the use of chlorinated lime for disinfecting the hands, from ten to less than one per cent" in the hospitals with which he was connected. By 1881 the use of antiseptics in midwifery became fairly well established. They were first used in America in the New York Maternity Hospital. The "mortality in that hospital for the nine years ending 1883, was 4.17 per cent. During the last six months before the change in treatment was made there were delivered two hundred and

*Read before the Ohio State Medical Society at the Columbus Meeting, May 9, 10, 11, 1900.

thirty-seven women, nineteen of whom, or eight per cent, died; of these, seventeen or 7.17 per cent succumbed to sepsis; for the last month the mortality from sepsis was over fifteen per cent. During the first three months after changing the treatment there were one hundred and two deliveries without a single death, "and for ten years ending 1893, the mortality from sepsis was but 18 per cent. Within the last three years there was but one death from infection in 1,059 parturient women.

Like improvement may be noted in all civilized countries; still, as is stated in the American Text-Book of Obstetrics, with the sole exception of tuberculosis, puerperal fever is the most fatal disease in women between fifteen and forty-five years of age. If we take the period of ten years between twenty-five and thirty-five, in which most children are born, one death in every six is due to puerperal fever. According to the report of the State Board of Health there were in Ohio, ninety-two deaths from puerperal fever in 1898 (56394 births), a little less than two deaths in every thousand confinements; one death from infection in every three hundred and nineteen deaths from all causes. This mortality evidences the existence of probably twenty times that number of cases of puerperal infection, or eighteen hundred and forty cases in the last year. As given in the census of 1890, the total number of deaths in twenty-eight cities in the United States from childbirth and puerperal septicemia during that year was 1,706, giving an average death rate of 17.59 per 100,000 of the population. This rate ranging from 31.86 in Denver to 6.69 in Philadelphia. From the same statistics, among 873,521 deaths, 6,295 were in connection with childbirth, and 3,863 resulted from puerperal septicemia. There were 11,257 deaths from affections connected with pregnancy; one death from puerperal septicemia in every two hundred and twenty deaths from all causes; thirty-four per cent of all deaths from childbirth and puerperal infection being due to the latter. In the same cities the aggregate death rate annually from childbirth and puerperal diseases during the census year, for every 100,000 women between fifteen and fifty years of age, was 60.63, being a little greater for colored, 63.25; white 60.40, and foreign born 80.28, natives 48.21. At the present death rate, through-

out the child-bearing period, one woman in every one hundred and nineteen dies with puerperal infection, there being a morbidity of from ten to twenty cases for each death. Good authority states that out of every 189 women delivered in New York or other large cities in private practice, one dies, a mortality of 1.12 per cent against .5 or even less than .1 of one per cent in the best lying-in establishments. Sloan Maternity reports but one septic death in 3,000 deliveries. In another hospital 2,000 consecutive cases were cared for without a death. The improved methods now in vogue have reduced puerperal mortality in maternities much below that which has yet been secured for parturients with the average home environment. The reverse should be true, for women confined in their own home, especially in the country and small towns, have the greater advantage of pure air and more sunshine. The results secured in hospitals by scrupulous attention to surgical cleanliness, demonstrate the possibilities of an improved system of obstetric practice. The problem of applying this system in private practice—the common theatre of childbirth—is now before the profession. Its solution will not be long delayed. Thorough aseptic preparation is now recognized as being imperative upon everyone who would attempt even the most trivial operation in surgery. Why should we not regard it as alike necessary for the obstetrician to render his hands and instruments sterile, and to remove as far as possible every source of infection in his obstetric work? That this is not done is evident to every general practitioner. The dangers of infection are far more to the puerpera than to those who undergo a great majority of operations in general surgery. In the former cases, the surfaces over which disease germs may be absorbed are more extensive, the glandulous structures more active, the nervous system more unstrung and the resisting powers of the tissues less. It has been demonstrated that the avenues of infection are usually through unclean hands, non-sterilized instruments, bed dressings, and unsanitary surroundings.

Every accouchement is essentially a surgical procedure, and all the rules which apply to aseptic surgery should be here enforced. Until this truth is fully recognized by the profession

and carried out, we shall continue to have a high puerperal mortality. Every physician should impress upon parents, or those who are soon to become such, the advisability of consulting a physician early in the period of gestation; then the physician could see that necessary preparations were made for labor,—the room properly prepared, carpets and old wall paper removed, closets emptied, and the lying-in chamber disinfected. As much care, if possible, should be taken in the preparation of the bed as there would be if it were to serve as a surgical operating table. Disinfection of the hands and instruments should never be neglected. It is not a sufficient excuse except in rare emergencies to say that we have not time to disinfect the hands. In the great majority of cases we had better refrain from doing anything than to offer assistance with unclean hands. If proper directions have already been given, hot water, sterilized towels and other conveniences for thorough disinfection will be in readiness.

The hands should first be thoroughly washed for several minutes in soap and water, preferably green soap. The physician should have with him a nail brush. The nails should be thoroughly cleaned and trimmed short, the hands rinsed in alcohol to remove fatty substances, then bathed in two per cent solution of permanganate of potash, decolorized in a solution of oxalic acid, immersed in a 1 to 500 solution of bichlorid of mercury, and finally rinsed in sterilized water. The more thorough this preparation has been, the less will be the liability of infection. If for any reason the permanganate of potash and oxalic acid solution are omitted, the bichlorid should be used for a longer time. There are perhaps other methods just as good for sterilizing the hands, but certainly no method that is less efficient should be used.

Examinations throughout the first stage of labor should be made with the greatest care, and not more frequently than is deemed really necessary. Since abrasions, contusions and lacerations are avenues for infection, the greatest possible care should be used to prevent their occurrence. Lacerations should be immediately repaired. If the same care were taken to secure asepsis in the management of labor as is now taken in surgical work,

no doubt the mortality would be very greatly diminished. Surgical work is now very largely performed in hospitals, but it is quite impracticable to furnish hospital care for all cases of confinement, and hence it is important that as far as possible asepsis should be secured in the home. It is far more difficult to carry out asepsis in private practice than it is in the hospital; yet it is not impracticable.

The average physician shrinks from the performance of surgical operations probably more from a realization of the difficulty of affording asepsis than from any other reason; yet he does not hesitate to attend cases of confinement with only the meagrest preparation. Physicians even sometimes boast that they pay little regard to this feature of practice. We have heard recently of a physician who traced several cases of puerperal infection to a contaminated glove, which had been worn at intervals for some two years. Until the profession comes to fully realize that it is just as important to render the hands and instruments sterile for obstetrical practice as it is for a surgical operation, we shall continue to have a large puerperal mortality.

Of all work which the obstetrician is called upon to perform, the most important feature is to see that his patient does not become infected. He may render valuable service in assisting labor, in relieving pain, and repairing traumatic injuries, but the most valuable service which he can render is to insure asepsis during parturition. It is here that the best results have been attained in the department of obstetrics during the last twenty years. Aseptic technique is the one thing now to be sought after, and its accomplishment in private practice will be a high achievement of obstetric science.

The advantage of asepsis in obstetric practice is so well recognized in the hospital that it would be regarded as criminal negligence not to have it perfectly carried out, but in private practice, especially by many country practitioners, its claims seem to be disregarded. In support of this statement permit me to quote from the American Text-Book: "Country practitioners are still greater opponents of antiseptic midwifery than those in the city. The country practitioner relies upon the purity of the atmosphere, and on the robust constitution of his patients. In

many respects country practice exposes the patient even more to infection than does city life. In most places there is no drainage. Manure is spread over the fields close to the house in which live the farmer and his wife. The village butcher kills his cattle, lets the blood soak into the ground, and nails the skins to the barn-doors whence their odor can be smelt far away. The country practitioner cannot go home and change his clothes and bathe; he must make his round or he would never get through with his work; and thus it happens that the same hand that was thrust into a perineal abscess, that performed tracheotomy on a child suffering from diphtheria, or that dresses a patient attacked by bullous erysipelas, at the next house is brought up to the fundus of the uterus in order to take away an adherent placenta." Is not this literally true? Do we not know that many practitioners make but slight preparation for attendance upon cases of confinement? And how many of us have the "aseptic conscience" so well developed that we regard every case of obstetrics as surgical? An annual mortality in Ohio of ninety-two persons and a morbidity of almost 2,000 from puerperal sepsis with numerous sequelæ calling for subsequent surgical relief, is evidence that here is room for improvement in our work.

In the light of experience puerperal infection must be regarded as a reproach, and the medical profession must assume the responsibility of its eradication. If the public be ignorant of the causation and has not been educated to an appreciation of the dangers of puerperal sepsis, it is largely the fault of the profession. It may be said that many of the cases are due to uneducated midwives; but the medical profession is in a sense responsible for these midwives, at least for their tolerance by the public. If general practitioners would impress upon the people the necessity of asepsis, and conscientiously endeavor to realize it in all their obstetric practice, it would not be long until we should witness the retirement of incompetent midwives, and a marked diminution in the death rate from childbirth. A strict enforcement of aseptic technique by general practitioners, must reduce the mortality and morbidity from puerperal infection in private practice, as much as it already has in lying-in hospitals.

In hope that it may serve as a reminder of our duty in this re-

spect, I would recommend the adoption of the following resolution. It is based upon a similar one passed in 1892, by the Obstetric Section of the New York Academy of Medicine.

"Whereas, Deaths due to puerperal infection are quite common in private practice as shown in the vital statistics of the state, and whereas, it has been demonstrated both in hospital and private practice, that puerperal infection is preventable by the observance of strict antiseptic measures.

"Resolved, That in the opinion of the Ohio State Medical Society, it is the duty of every physician practicing obstetrics, to surround the parturient woman confined in her home, with the same safeguards against infection that are being used in hospitals."

This society can render at this time no more valuable service to humanity and the science of medicine, than to familiarize its members with the best practical methods for the aseptic management of labor, and induce them to uniformly apply the same in private practice.

The adoption of the above, or some similar resolution would serve as a reminder that the safeguard of parturition is surgical cleanliness; that the master word of surgical science is asepsis, and its mandate is just as imperative in obstetric practice as it is in the domain of general surgery.

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HEMATOMA OF THE VULVA AND VAGINA.*

A. L. WRIGHT, M. D.

The old writers treated of this subject under the head of Thrombus of these parts. Of late, however, the pathological conditions have been treated as hematocele, if the hemorrhage was from one of the deeper vaginal vessels and within the pelvis, or hematoma, if the swelling commenced in one or both labia. Thrombus is rather loosely applied to the hemorrhage

*Read at the meeting of the Western Surgical and Gynecological Association, December 28, 1899, at De Moines, Iowa.

either in the vagina or vulva. As will be shown later, the pathology is that of a hemorrhage into the cellular tissue of the vulva or vagina and surrounding structures, consequently is not a true thrombus. It has been suggested that the term be restricted to those cases of vulvo-vaginal hematoma where the hemorrhage is of venous origin and not due to arterial rupture.

Prior to the halcyon days of clean midwifery all the dystocia that crossed the pathway of the lying-in woman was attended with much danger. The subtle enemy lurked in ambush and sought in darkness to entrap the precious life of its victim, or to compromise the mother's future well-being, by leaving the stamp of dread disease upon her, thereby blighting her fondest hopes, and relegating to the doubtful care of others the tender life of the new born.

Since the light of dawn first began to appear in the far east, shedding its illuminating rays throughout the universe, constantly growing brighter and brighter, gradually penetrating every nook and corner, first one and then another of the various branches of our noble science until at the present time, there is not a disease to which flesh is heir that has not felt its beneficent influence. The subject under consideration was attended by a frightful mortality during the dark period before dawn. In a monograph published by Deneux, he reports sixty-two cases of thrombus of the vulva, twenty-two of the number dying. This mortality seems excessive, as Winckel met with but six deaths in fifty cases and Fordyce Barker two deaths in thirty cases. Johnson and Sinclair encountered two deaths in seven cases in the Dublin lying-in hospital. Seanzoni had but one death in fifteen cases. Perret, on the other hand, in an analysis of forty-three cases reports seventeen deaths. No doubt some of these were due to other causes than that ascribed, as in some instances the patients dying were reported as having some other complication, as puerperal fever.

The possible influence of the thrombus as a port of entry for the admission of the pathogenic organisms must not be overlooked when we encounter this condition. Though not of frequent occurrence it is met with sufficiently often to merit consideration at our hands. In over six thousand deliveries reported

by Deneux, Dubois, and others, the accident was met with but eight times. American authors and Winchel are of the opinion that it occurs once in sixteen hundred deliveries, basing their conclusions on fifty thousand confinements, while Wenning thinks it occurs once in two thousand times. The frequency of its occurrence is very difficult to estimate and of little consequence; men of large experience have never met with a case, whereas after many years they encounter a bunch of them in a short space of time.

During an experience of twenty-five years, the greater part of that time engaged as general practitioner, meeting with a goodly share of the neighborhood obstetrical work, I have never met with this accident in my own practice. Since devoting my time largely to surgical work, I have encountered four cases; two of the number coming under my observation during the past year. In discussing the dystocia with some of my confreres—many of them doing a large obstetrical work—they inform me that they have never encountered this accident; in fact, they have expressed surprise that the accident may occur to the lying-in woman. This leads me to the belief that hematoma of the vulva and vagina is of exceedingly rare occurrence, even more so among our rural people than in cities. It is a source of great pain to the patient, alarm to the attending accoucheur, and not infrequently the cause of much embarrassment, the exact pathological condition not being recognized, or mistaken for some other condition. In one case coming under my observation, the attending physicians believing that the woman had some unusual form of hernia, had made prolonged efforts at reduction, by taxis, but in spite of their efforts the tumor had continued to increase in size, until the coagulated blood removed some hours later would fill a two-quart pail.

The tumefaction when in the vagina and occurring before delivery, has been mistaken for some part of the presenting fœtus, although Perret states that in an analysis of all the published cases at his command, he cannot find an instance where this error was made.

Barker, on the other hand, reports one case mistaken for the fœtal head and another for placenta prævia. In one case I met

with during the past summer the attending physician stated, that he had at first mistaken the intra-vaginal swelling for the head of a second child, believing he had a twin pregnancy. He discovered the error very soon, but was not able to determine the exact nature of the dystocia. Were it not for the frequency with which the mucous membrane and the perineal body in the primipara tears, hematoma would be met with much more often. The laceration permits the blood to escape instead of accumulate in the cellular tissue of the surrounding parts.

While we can readily conceive of a hematoma of the vulva and vagina as a result of a trauma inflicted to these parts in the unimpregnated woman, this causal relation must certainly be very rare, although Velpeau states that it is more frequent in the non-gravid condition than during pregnancy. This does not, however, correspond with the experience of others. The hemorrhage is almost always met with during the later months of pregnancy or during delivery. Then we are safe, I take it, in assuming pregnancy the most important etiological factor predisposing to the accident, due to its effect upon the blood vessels, producing as it does more or less local stasis.

The influence of the gravid uterus upon the return circulation from the lower extremities, is such as to make it a far more dangerous accident to the pregnant than the non-pregnant woman.

The influence of the varicose condition of the veins is problematical, as broken down veins on the labia and extending into the vagina are quite frequently met with in the pregnant woman and rarely giving rise to trouble. The entire absence of the varicose condition of the veins has oftener been noted in hematoma than their presence. Barker argues that a varicose condition of the vein is in favor of the woman escaping this accident. A greater predisposing cause I believe to be exerted by the chemically changed composition of the blood current itself, upon the nutrition of the tunics of the blood vessels. It is a well known fact that the blood of the pregnant woman contains abnormal constituents and toxins not found there at other times. The influence of this foreign matter upon the nutrition of the locally engorged blood vessels certainly must be deleterious.

The influence of syphilis upon the blood vessels producing as it does an endarteritis, thereby rendering them more easily ruptured under strain, no doubt contributes more frequently in a causal relation among the inhabitants of our cities, than in the rural districts; owing to the fact that syphilis prevails to a greater extent in our cities than in the country. The same may be said of atheroma; while it is, as a rule, an affection of the larger arteries and advance age, under the stimulating influence of alcohol, and other forms of vice, it may attack the smaller arteries and produce areas of degeneration in their coats that will give way during delivery. A disparity in the diameters of the pelvis and the child's head may also act as a contributing cause. The mother, making excessive efforts to overcome the resistance offered to the passage of the large head, exerts herself to the utmost. Faulty presentation, the manipulation of the accoucher to correct the same, have no doubt more than once contributed to the formation of a hematoma. The same may be said also, regarding the use of forceps.

The most frequent determining cause is parturition itself. It is rarely met with during the early months of gestation, but when encountered at this time is due to local violence, as excesses in sexual intercourse during a drunken debauch or to blows and falls upon the parts. (The same is true of the non-pregnant woman.) I am skeptical regarding emotional causes alone. We can readily understand how the gravid uterus can so interfere with the return circulation as to cause an atheromatous vessel, or one already undergoing degenerative changes due to syphilis, to give way under pressure of the same, but this must be very rare. During labor, however, there are many influences operating. The labor is generally very severe and greatly prolonged. The mother exerting herself to the utmost to deliver her child, necessarily greatly increases the engorgement. If the integrity of a blood vessel has suffered in any way, by reason of faulty nutrition or pre-existing disease, the already over-distended vessel will give way, or the long-continued delay of the head in the pelvis may produce sufficient pressure to cause necrosis of the vessel tunics, so that the hematocele does not form for some hours or days after delivery. Helfer reports a case

coming under his observation where the formation of the hematoma did not take place until the twenty-first day after delivery.

The rapidity with which the tumor forms will aid us in determining whether the ruptured vessel is an artery or a vein. The rupture of a large vein would prove an exception, however. It is a well-known fact that a vein may be ruptured during the passage of the head through the pelvis, but owing to the pressure of the former against the pelvic wall hemorrhage does not take place until after delivery, and not then unless the rent in the vessel is free. The tear may be occluded by a small clot, that prevents the escape of blood, until it is dislodged by some violent exertion on the part of the patient, as in coughing or raising herself up in bed.

The veins are more frequently ruptured than the arteries. This fact no doubt is what gave rise to the impression that formerly existed, that a varicosed condition of the veins was a necessarily predisposing cause of hematoma. In one case encountered during the past year the tumor was due to the rupture of one of the deep branches of the internal pudic artery that supplies the deep structures of the vulva. This was secured and all hemorrhage stopped. A careful examination revealed the fact that the veins of the parts were not varicosed.

The first manifestation that is complained of is pain, the intensity depending on the close proximity of the hematoma to the clitoris and the size of the same; it is due to pressure on the nerve filaments in the parts. Dr. Barker reports having seen one case where the patient declared that she had absolutely no pain, although the labia was greatly distended. The pain radiates down the inner aspect of the thighs, over the abdomen and into the back. The last case I saw complained of the pain in her back only. The distress from the pressure of the effused blood upon the rectum and bladder is very marked if the hemorrhage is diffused through the pelvis, or retention may be a prominent symptom if the tumor is large enough to exert pressure on the urethra. On examination a round globular tumor is discovered producing an enormous swelling on one or both sides of the introitus extending into the vagina. If the tumor appear in the vagina, before delivery of the child, it is claimed it may of-

fer considerable obstruction to the advance of the same, and require prompt interference.

The hemorrhage is sometimes so severe as to fill the entire pelvis, overflow into the abdominal cavity, or extend over the thighs and abdomen. Cazeaux reports a case where the hemorrhage was so great as to lift the peritoneal folds of the broad ligament wide apart, producing extensive retroperitoneal extravasation and infiltration. To the touch the tumor is a smooth globular mass, unless it is diffused, imparting an elastic sensation, easily recognized and ought to give rise to little difficulty in diagnosing. If open to inspection, the tissue over the swelling presents a dark mottled or mahogany appearance. The first indication that may attract attention is the blanched appearance and constant restlessness incident to the loss of a large quantity of blood; and examination reveals the gravity of the situation, which may be greatly increased by a grave internal hemorrhage; the relative gravity of the case depends upon the loss of blood.

The tumor varies in size from the merest extravasation to a cocoanut. It usually assumes a dark livid appearance, and if accessible ought not to be mistaken for anything else.

The practical application to obstetrics, of the principles of asepsis and antisepsis, that underlies all surgical work today, has brought about an entirely different result attending the accidents occurring in the lying-in chamber. Pasteur's discovery of the laws governing fermentation has as completely revolutionized medicine as the discovery of the law of gravitation by Sir Isaac Newton has changed the physical laws governing the universe. Lister first took advantage of Pasteur's work and put into practical application the principles underlying the thoroughly clean surgical work of today. These principles were soon applied to obstetrics, with the result that now the fatalities from septic infection following delivery is reduced to the minimum and we never hear of such a mortality as reported by Denoux, of 21 children dying and 22 mothers from hematoma; in 62 deliveries; or, as reported by Perret, of 17 deaths in 43 confinements. Death rarely occurs at the present time, except it is due directly to the enormous loss of blood.

If the blood clot is not large it will be quickly absorbed, otherwise it will become infected, suppurate and then be discharged, unless opened up and emptied out by the attendant. The entire mass may become gangrenous and slough away. If the ruptured vessel is well within the vagina and the mucous membrane gives way in advance of the descending head, the hemorrhage may be frightful and prove fatal to both mother and child. The prognosis will depend upon the period of gestation at which it appears, the size of the tumor, its location, the extent of the hemorrhage that is concealed and beyond a superficial inspection, as well as the treatment inaugurated. Care should be exercised in examining a case of suspected hemorrhage of this kind, that the overflow is not into the abdominal cavity. Such being the case the gravity is greatly increased, and will require the most careful management to avert a fatal termination. Prior to the two last decades the mortality was much greater than since the introduction of antiseptic methods into our obstetrical work.

From my own experience I am convinced that it is not a time for tentative measures. The attending accoucheur must be clean and act promptly, otherwise the mortality will increase. As has been pointed out elsewhere, the hematoma appearing before delivery is very rare and not attended with much danger. But if the tumor appears in the vagina in advance of the head the mortality to both mother and child is very great. The treatment to be pursued will depend upon the size and location of the tumor, as well as the date of its appearance. Small hematomata giving rise to little suffering may be treated expectantly, with the hope that nature will dispose of the same. In leaving the tumor to be absorbed, the fact must not be overlooked that the danger of infection is great and may seriously compromise the patient. The tumor appearing in the vagina in advance of the head calls for the most careful consideration. If the blood is escaping into the abdomen, and you are certain the torn vessel is not in the folds of the broad ligament (the latter would necessitate a laparotomy), do not incise, but make local applications of ice to the parts with pressure, hoping that the hemostatic influence of the ice and the pressure of the retained bloodclot may

control the hemorrhage and prevent its overflow into the abdomen, at least not to the extent reported by Cazeaux, where the clot extended as high as the short ribs back of the kidney, and under the liver. The escape of a large quantity of blood into the abdomen under such trying circumstances is one of the most serious accidents of the lying-in chamber.

Care should be exercised in examining a case of suspected concealed hemorrhage that the flow is not of this character, in order to avert a fatal termination. An early incision may give vent to the free escape of blood, and astringents, gauze packing and pressure may not control the bleeding as successfully as the accumulating blood clot itself. The mere pressure of the blood clot will offer but little resistance, as a rule, to the passage of the head through the pelvis, but will yield to pressure and diffuse itself throughout the tissues. Madam Lachapella has reported a case in which the thrombus commenced during labor and rapidly increased in size after the child's delivery. The obstruction to the escape of lochia became so great from the size of the hematoma as to give rise to a severe uterine hemorrhage somewhat later. In the effort to pass her hand into the uterus to empty it of the clotted blood, the tumor was involuntarily ruptured, when a large quantity of coagulated blood escaped and the alarming symptoms subsided.

Delivery should be effected promptly in all cases of hematoma, regardless of the location of the swelling. Forceps delivery of the head is to be preferred to turning, owing to the pressure influence it may have upon the torn blood vessel. Another consideration that must not be overlooked when contemplating the advisability of an early delivery is the relief given the local pressure stasis that is increasing the hemorrhage, and enhancing the danger.

The hemorrhage occurring in the labia attains a large size. The patient lies with her legs akimbo and usually in intense pain. The vessel is ruptured during delivery, but the swelling does not take place with sufficient rapidity to alarm the patient until some hours later, when the medical attendant will be sent for in great haste. The tumor should be carefully exposed and freely incised, the clots emptied out and the bleeding point se-

cured; or, if this cannot be done, the wound should be firmly packed with gauze held in place by a large pad, or two or three retaining sutures placed so as to hold the packing and maintain pressure. Oozing still continuing, remove the gauze and saturate it with pure alcohol in preference to persulphate of iron, as the latter favors suppuration, and then repack the wound; or, before repacking, I have taken a large gauze or cotton swab soaked in equal parts of wood alcohol and water, hot as the parts will stand, and pass it into the cavity with seeming good results.

While looking after the local condition in these cases of severe hemorrhage, the general well-being of the patient must not be overlooked. If the loss of blood has been great enough to give rise to shock or in any way seriously compromise the patient, intravenous or subcutaneous injections of a normal salt solution must be given to replace the blood lost; morphine and strychnine, hypodermatically, to assist in maintaining the vital energy until such time as nature takes to plug the bleeding vessel.

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PUERPERAL ECLAMPSIA: ITS CAUSE AND TREATMENT.*

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Puerperal eclampsia still affords a topic for an indefinite number of opinions as to its etiology and treatment, and in this respect resembles many other diseases whose precise nature we do not know, and for which we have no specific. It is an interesting disease, at least to everyone that has ever treated a case. The fact that the attendant is nearly always brought suddenly and unexpectedly face to face with this most terrific disease is calculated to try his mettle and to bring into requisition all his coolness and skill. The three cases that I have met with in twenty-five years were thrust suddenly upon me; the first being my first case of any kind, the other two being in consultation,

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while of all the cases in which I feared convulsions, in not one did they materialize.

Eclampsia may occur at any time during pregnancy, or during the first few days after delivery. Cases have been reported two, three or even four weeks after labor, but these late cases are of uncertain character. In the *American Journal of Obstetrics* for June, 1883, Löehlein reports a case on the 15th day, but intrauterine injections of a 1 or 2 per cent solution of carbolic acid had been used daily and there was dark green urine, denoting carbolic poisoning. Corson, of Savannah, attended a patient that remained anasarcaous and had eight convulsions on the 33d day post partum. A hypodermic injection of one grain of morphia stopped them and she recovered. On the other hand cases have been reported as early as the second or third week of pregnancy. The liability to convulsions increases rapidly as pregnancy advances, for reasons that will be mentioned later. The proportion to all cases of labor is about 1 to 400, about four-fifths of the cases occurring in primipara. Kucher, of New York, had 52 cases in 12,000 (43 primipara and 9 multipara); but he remarks that many women were brought to the hospital because they already had eclampsia. V. Bue gives the statistics of the Clinic at Lille from Jan. 1, 1887 to Nov. 20, 1896. In 5822 labors there were 17 cases of eclampsia, 15 primipara, 2 multipara; with 3 maternal and 6 fetal deaths. Knapp, of Berlin, had 22 cases in 4480; Pinard at the Baudelocque Clinic, Paris, in 1894-5, 9 cases in 4180 labors. Corson had the remarkable experience of 23 cases in 500 labors. He says: "The liability of the colored to eclampsia is very noticeable, as well as the great fatality from the disease."

The prognosis of any case must be guarded, for it is a disease of grave import. The maternal mortality ranges from 17 to 30 per cent, that of the child being considerably greater; but in a disease of such varying intensity a statement of the percentage of deaths means little. In any given case the strength, duration and frequency of the fits, and the cerebral mischief resulting therefrom, as evidenced by the depth of coma, must be considered. Of these the coma is the most important element of prognosis. The period of pregnancy must also be considered.

As a rule the earlier in pregnancy the disease shows itself the more danger to life. The condition of the os uteri as to dilatability is a matter of concern; for the facility with which the womb may be emptied will have much to do with the recovery of the patient. A large number of the children will be lost, for they too suffer from the intoxication. Occasionally a child born alive from an eclamptic mother will die in convulsions soon after.

In order to formulate a rational plan of treatment it is necessary to understand the etiology of the disease; and here is the stumbling block. Quite a number of different theories of the causation have been propounded, one of the first being the albuminuric. Albumen was recognized in the urine by Cotugno in 1770 and its frequent coincidence with pregnancy was noted by Blackall and Wells in 1818. A recent investigation of about 700 pregnant, parturient or puerperal women has shown albumen to be present in 5.4 per cent and it is almost invariably present in eclampsia. In 1842 and 1845 Lever and J. Simpson propounded the theory that albuminuria caused eclampsia. Ramsbotham, writing 40 years ago, speaks of albuminuria coincident with puerperal convulsions, but does not appear to recognize their uremic origin. He hints at the nervous origin of some cases, as those in which the attack is apparently precipitated by irritation applied to the womb or by worry, etc. Thus in one case he says that a patient had had convulsions which were relieved by bleeding, and the labor having come on 50 hours afterward and being terminated in 5 hours, he was called at the end of two hours to remove the placenta. "But," he says, "the moment I passed my hand completely into the uterine cavity, the patient turned upon her abdomen and, without uttering any expression of pain, went into a convulsion." Tyler Smith, writing about the same time, seems to have had a clearer idea of the causation of some cases by toxemia, for he says: "The albuminuria sometimes present and which also appears to be caused by pressure on the kidneys and the renal vessels and nerves accumulates noxious elements in the blood."

The scanty urine of an eclamptic patient injected into a rabbit produces but slight toxic effects, yet the urine of the same

patient, after it has become more abundant, will produce violent convulsions when so injected, showing that a poisonous substance is being eliminated. It is objected to the albuminuric theory of eclampsia that many cases do not show albuminuria until after convulsions have occurred. It is hence held that albuminuria is a concomitant or effect and not a cause, and that uremia is the real cause, deficient elimination of urea being possible without albuminuria. But it has been shown that urea in large quantities may be thrown into the veins without producing any noticeable effect. The signification of the term uremia must then be widened so as to mean the retention of all the excretory products that should pass out by the kidneys, and the amount of urea excreted taken only as an index of the rate of elimination of such poisons. Neither must renal insufficiency be considered the primary lesion, but rather a result. Depaul, Galabin, Barnes, Playfair, Parvin and Winckel all teach more or less clearly that the kidney disease as well as the convulsions and coma are due to a pre-existing poison. Nevertheless, the kidneys are subjected to strain in pregnancy from other causes than this. It must be borne in mind that the kidneys must eliminate not only the effete material of the mother, but also that of the fetus. With the growth of the fetus this added burden becomes greater, and thus is explained the increased liability to convulsions in the latter months of pregnancy. Moreover, the pressure of the enlarged uterus embarrasses the circulation in the renal veins just as a tumor may do, and this pressure, increased by the more rigid abdominal walls of the primipara, in part at least explains the greater danger of first pregnancies. This pressure is sufficient to produce noticeable dilatation of the ureters in about one case in ten. It is easy to understand that healthy kidneys working at such disadvantage would quickly fail when an added poison should pass through them.

The liver as well as the kidneys shows on post mortem examination evidences of the struggle, in fatty degeneration, dilated capillaries and necrotic points, and sometimes there are hemorrhages in the lungs and brain. There is, therefore, hepatic insufficiency, and the noxious substances brought from the in-

testine, or more probably from the uterus, are not destroyed nor eliminated.

Whether there is a special eclamptic poison, or what it is, has not yet been determined. Ammonia in the blood from the decomposition of retained urea has been suggested, but has never been found in sufficient amount by any analyst to have importance. Quite a number of other theories now discarded do not call for notice. Others I will mention.

In many eclamptics acetone may be smelled on the breath and found in the urine in much more than normal quantity. It is a product of abnormal decomposition of proteids. It is known that the fatal termination of diabetes by coma is due to acetone-mia, the acetone being a product of the splitting up of diabetic sugar in the blood. This lends an air of probability to the theory that the coma of eclampsia is due to the excess of acetone that can be demonstrated in many such cases. The formation of considerable quantities of acetone or of other poisons does not seem to produce deleterious effects if the eliminating organs are in healthy condition. In some cases of fasting the amount of acetone has been found to be increased 48 times in a few days, and it is evident that a fast of that length is insignificant.

Dr. A. W. Johnstone, of Cincinnati, believes that paraxanthin is at the bottom of it all. He says that with the paraxanthin gotten from one quart of urine from a fatal case of eclampsia he has seen six or eight mice and one guinea pig killed in convulsions.

It is probable, however, that not one, but several substances, combined, are the primary cause of the symptoms.

Some observers think that the absorption of noxious products of decomposition from the intestines is responsible for it in part. The fact that the threatening symptoms subside on the death of the fetus, and that emptying the uterus, more than anything else, will control the convulsions, renders it very probable that products of fetal metabolism are the most potent agents in producing the disease; but whether these are normal fetal products or diseased ones is entirely unknown. The study of numerous cases and of the opinions of many authorities leads to the conclusion that we are dealing with the composite effect of several

causes. There is an excitable nervous system made more so by blood doubly loaded with excretory products, and this intensified by deficient renal secretion, and to this added in many and probably most cases the reflexes from an irritable uterus. That the immediate exciting cause in many cases is uterine irritation is shown by the fact that often the convulsion is ushered in by a uterine contraction, as well as by the fact just mentioned, that emptying the uterus is by far the most certain means of stopping the convulsions.

The treatment of puerperal eclampsia will naturally resolve itself into that of the pre-eclamptic, and that of the eclamptic stages. Though not logically coming first I will speak of the treatment of the eclamptic stage, as too often that is the only stage we get to treat.

Our patient may or may not have some anasarcaous swelling, maybe a little puffing of the face, maybe none. She complains of headache, generally in the vertex, and she may speak of flashes of light before her eyes; there is some twitching of a few muscles, a pain comes on, and she goes into a general convulsion. The convulsions may be repeated as many as 20 or 30 times. After the first convulsion sometimes, and almost certainly after a few, she does not recover consciousness but remains in a state of stupor.

It is necessary first of all to stop the convulsions, as every one that the patient undergoes adds to the danger to life. This must be done by lessening the reflex excitability of the nervous system, and this must be done by the use of sedatives. It was taught by the older authorities that in puerperal convulsions the lancet is our sheet anchor. There is no doubt that blood letting does have a powerful effect to control convulsions, and it does this because a rapid lowering of vascular tension is one of the most effective of sedatives, and the poison carried out in the shed blood is so much quickly eliminated. The objection that applies to bleeding, viz: that the lost blood may be needed later, leads me to speak of a substitute that I can hardly believe original with myself, and yet I have failed to see any reference to it in my reading. In my first case it occurred to me suddenly during the first convulsion that if I would hold the blood back

in the veins by ligating the arms and thighs it would relieve the intense congestion of the head. Having towels tied loosely around the thighs, when the second convulsion was at its height, I quickly drew them tight and was gratified to see the patient almost instantly relax. The prompt result of this maneuver recommended it to me and I have often used it in cases that called for a prompt lowering of arterial tension, as in cases of pulmonary hemorrhage, obstinate epistaxis, etc. There is nothing that a physician can do so quickly when a convulsion occurs as to tie cloths tightly around the thighs and arms, and it is about the only thing he can do while the convulsion is on. I have a few years ago seen this method recommended for the arrest of hemoptysis, but I have not seen other reference to it.

If bleeding be resorted to, as it should be in very plethoric patients, it ought to be copious enough to produce marked lowering of arterial tension regardless of the amount. In very bad cases bleeding might be carried to the extreme and the effects mitigated by the subdermal use of large quantities of normal saline solution. Evidence is multiplying to prove the good effect of injection of normal salt solution into the subdermal cellular tissue in diluting the poison in the blood, as well as in rallying a patient who is more or less collapsed. Either with or without bleeding a pint or two of a 0.75 per cent solution of salt (about one teaspoonful to a pint) may be run under the skin of the abdomen or, as proposed by Edebohls, under the mammary glands. The swelling produced by this bulk will disappear in half an hour, and often prompt diuretic effect will follow. The ordinary fountain syringe may have the needle attached to its tube and if the pressure is not sufficient to force in the fluid the flow may be aided by stripping down the tube after lubricating it. In the *Journal of the American Medical Association* for June, 1896, is a report of 20 cases treated with the saline injection, all recovering. Other later reports, though not so favorable as this, yet show good results.

Chloral per rectum in doses of 30 to 60 grains is highly recommended. It was popularized in this country by Goodell, but has been much used in France. Goodell condemns the bromides as useless.

The hypodermic use of morphia has a marked effect in preventing or suspending uremic symptoms. Of this there is no doubt and many successful cases are reported to substantiate it. Clark, of Oswego, says that small doses are useless and not less than a grain should be given at first. It is believed by many that it deepens and prolongs the coma, and that it is hence not to be depended on, but at the Geneva International Congress of Gynecology, Veit said that the results of the systematic administration of morphia had not been equalled by other methods.

Veratrum viride has undoubtedly a marked effect in this disease, but it must be used in large doses, the effect on the pulse being the guide. Reamy gives Norwood's tincture 40 drops hypodermically and repeats in smaller doses. He says: "When the pulse is 40 or 50 per minute the convulsive centers are pretty well suspended." Prof C. D. Palmer believes *veratrum* is the best remedy in these cases, but he often combines morphia with it. Thayer, of Boston, says *veratrum* is destined to supersede all other methods and that the pulse should be kept below 60. In a case at the seventh month with very scanty urine, Shober, of Philadelphia, gave 20 drops every 4 hours, next day 40 drops every 4 hours, the third day 10 drops, etc. By the sixth day the urine was 100 oz. in 24 hours. On the other hand Potter considers it dangerous, uncertain and deceptive. Of course in the pale cases it should not be used, but chloral and chloroform should be depended on.

Nevertheless, over and above all other treatment, all agree that emptying the uterus, either naturally or artificially, has most influence for good. There has been much discussion as to the advisability of active interference. It is thought that active efforts to dilate and evacuate are likely to bring on a return of spasm by reflex action. Charpentier advocates a natural termination if possible. Grandin teaches rapid manual dilatation under chloroform and says that 30 minutes is ample time. Lusk is conservative and advocates waiting if possible. The true course is probably to deliver if the os is patulous, and if rigid to wait rather than to use great force. The deep incisions in the cervix proposed by Dührssen do not seem to meet with favor except in desperate cases.

A year ago I was called in consultation to a single woman 20 years old, eight and a half months pregnant, who had had nineteen convulsions in the preceding twenty-two hours, but with no labor. She had been given bromides and some homeopathic remedies. I found her deeply comatose, the pulse 156 and feeble, the lungs drowning in profuse bronchial secretion and the end apparently not far off. I at once proposed and gave her hypodermically 15 drops of fluid extract *veratrum viride*, but I must confess with fear, that if it did not cure it would kill her. On digital examination I found the os soft and patulous and it occurred to me that if an expert could dilate it with the fingers in half an hour I ought to do so sometime. The first endeavor to dilate brought on a convulsion. The towels which I had placed around her limbs were promptly tightened and the fit soon ceased and did not recur. In half an hour the pulse had dropped to 85. As soon as the os would admit the forceps I applied them and soon after noticed the first sign of expulsive effort. In an hour and a quarter from the time I began I delivered her of a large dead child. She lay comatose 48 hours longer but recovered without further incident.

It may happen that symptoms will call attention to a patient's condition at some time in the latter months of pregnancy. These may be any of the following: headache, puffiness of the face or of the entire body, scanty urine, floating spots before the eyes, or maybe only melancholia, as pointed out by E. P. Davis. A urinalysis will now almost certainly show albumen. The patient should be at once put on a milk diet. The tension of the arterial system should be brought down, and this of itself will favor better action of the kidneys. In nearly all cases the physician thinks first of getting a free flow of urine and in trying to do so he may forget that it is necessary to supply large quantities of fluid as well as to give diuretic drugs. Potassium salts are naturally first thought of. William Warren Potter thinks they should be avoided. He says, "They favor the production of intestinal toxins, and besides tend to diminish red blood corpuscles—an element that must be conserved." In this connection I may call attention to the report of a case by Clark and Shelton in the *American Journal of Obstetrics*, Feb., 1897.

The patient, a primipara aged 30, had been under close observation with weekly urinalysis and had gone to the eighth month in almost perfect condition; but then the urine, with a specific gravity of 1014, quantity 50 ounces, showed a trace of albumen; everything else normal, no discomfort, no œdema. They say: "The patient was put upon a milk diet and given potassium citrate; the next morning the urine showed ten per cent albumen, no casts." She had muscular pains and fatigue. That night she took 30 grains citrate potash and at 2 A. M. was in convulsions and barely escaped with her life. Isn't there a lesson in this history? If there is these observers do not mention it.

Post mortem examinations having shown that the liver is at fault as well as the kidneys, it is probably of much importance to promote a healthy action of that organ. Clark and Skelton say: "The best results in treatment are obtained from hepatic stimulants and cholagogues. These are far more reliable than diuretics. Carl Braun has for his routine treatment a pill of aloes and colocynth from which he reports unusually good results." In cases with any threatening symptoms it has been my custom for years to administer every morning for one or two weeks a dose of sulphate of magnesia, generally combined with ginger, and large enough to produce one or two free evacuations each forenoon, and convulsions have never occurred in such cases.

Finally, if the symptoms do not improve under medical and dietetic treatment, but convulsions seem imminent, we should resort to artificial delivery, into the details of which I need not enter.

Wellston, Ohio.

ACUTE SENILE ENDOMETRITIS.*

L. H. DUNNING, M. D.

The author presents the clinical history and pathology of Acute Senile Endometritis which he thinks has not been duly recognized and adequately described. He gives a detailed his-

*Original abstract of paper read at Atlantic City, June, 1900.

tory of two cases upon whom he did hysterectomies and presents the histological findings in each case.

The cases were in both instances in women 63 years of age in whom the menopause occurred many years previously. The clinical history in its main features, was identical in both cases.

The women had been well until a short time (one and three months) previous to examination. There had been no uterine discharge. At the beginning, the discharge was described as thin and irritating. Shortly it became sanguinous and offensive. Pain appeared in the pelvic region. General lassitude and rapidly growing ill health appeared. There was backache, bearing-down pain and some vesical disturbance. The skin was dry and sallow. This was marked in the case of longest duration. In this case the general appearance suggested cancer. The uterus in one case was in normal position, in the other retroverted. A diseased tube and ovary could be palpated in one.

The external os was patulous and the internal os permitted the easy passage of an uterine sound. There was senile vaginitis in both cases.

Hysterectomy was done in both cases. Both uterine cavities were distended by a foul smelling, sanguino-purulent fluid. A microscopical examination of both uteri was made, and findings reported. Microphotographs of sections were also presented.

The author presented the following summary and conclusions:

1. The lesion found in both uteri was an acute inflammatory process. It may be properly denominated Acute Senile Endometritis.

2. The characteristic pathological features of the inflammation are (a) a thickened endometrium, the free surface of which is devoid of its epithelial layer; (b) increased vascularity with peculiar arrangement of small blood vessels; (c) small round cell infiltration; (d) diminished glandular elements. While a few glands are to be distinctly seen in many of them, their epithelium is desquamating and their lumen filled with granular debris. They may be said to be functionless glands. (e) degeneration of the coats of the arteries of the muscular lay-

er of the organ. In one specimen (No. 11) this degenerative process is distinctly hyaline. (f) in not one section examined from various parts of the organ could there be found any connective tissue.

3. The mucosa of both the cervix and body are involved in the inflammation, but it is more marked in both cases in the body of the uterus.

4. The small round cell infiltration extends into the upper muscular tissue, though the inflammation is more marked in the mucosa.

5. In both cases one uterine appendage was diseased; in one the ovary was cystic, in the other, one ovary cystic and the Fallopian tube inflamed. In this case there was slight recent peritoneal adhesions.

6. The microscopical appearances in these cases bears but slight resemblance to that found in cases of interstitial endometritis.

7. In one case the acute inflammation seems to have developed without any preceding chronic inflammation. In the other case the acute attack may have been an acute exacerbation of a chronic inflammation.

8. In one case there was a marked retroversion of the uterus, in the other the uterus was in normal position and in neither case was there marked stenosis of the internal os, yet there was a considerable accumulation of fluid within the uterine cavity.

9. The presence of diseased appendages in both cases and of pelvic peritonitis (mild) in one seem to indicate that the inflammation is prone to extend beyond the limits of the uterus, and if such extension is demonstrable by combined examination, an extirpation of the uterus and appendages is indicated.

Indianapolis, Indiana.

A PLEA FOR THE MORE FREQUENT AVOIDANCE
OF EXSECTION OF THE OVARIES IN CON-
NECTION WITH THE REMOVAL OF
DISEASED TUBES.*

PHILANDER A. HARRIS, M. D.

This paper addresses itself to all gynecologists, who by routine practice are removing the ovary while exsecting or excising a diseased tube; to all who practice removal of both ovaries whilst exsecting or excising both tubes; and especially to the very much large body of general practitioners who feel so particularly answerable for the condition of their patients after operation, when referring them to the surgeon. The author lays special stress upon the fact that the Fallopian tubes, when once infected by suppuration, so persistently harbor it, that they constitute the natural habitats of pelvic suppuration. The ovaries should be regarded as the contiguous and comparatively unwilling participants in these suppurations. The ovaries generally recover from the effects of inflammation when the adjacent and suppurating structures have been surgically or otherwise cured. The author claims that the good results which have followed removal of the tubes and ovaries, for tubal suppurations, can in most cases be secured without sacrificing menstruation, thus preserving for such patients as much ovarian tissue, menstruation and consequent ovarian influence as possible, and not entirely depriving them of the possibility of conception. The reader has observed one case of pregnancy following the removal of both tubes close to the uterus.

Paterson, N. J.

*Original abstract of paper read before the Obstetrical Section of American Medical Association, Atlantic City, 1900.

REVIEW OF GYNECOLOGY AND SURGERY.

SENILE ENDOMETRITIS.

Dr. August H. Goelet, Professor of Gynecology in the New York School of Clinical Medicine, says:

"If a patient past the menopause complains of disordered digestion, unusual nervousness and insomnia, is thin and poorly nourished, the skin is dry and irritable, and the general circulation is poor, it is safe to suspect senile endometritis. Even if she denies the existence of any discharge or pelvic symptoms, an examination should always be insisted upon, especially if the general symptoms have resisted treatment.

To mistake a case presenting these symptoms for cancer of the uterus would be excusable if the question of an operation or removal of the diseased structure was not considered, but to submit the patient to hysterectomy without positive diagnosis would certainly be a grave error. In the absence of facilities for a more accurate diagnosis of cancer, it would be better to institute a course of treatment which, should the case be one of senile degeneration, would result in clearing up of the case and relief of all the symptoms. The delay necessary for such treatment would not militate against an operation for the removal of the diseased structure should it prove to be cancer. Nor would the delay necessary be of material disadvantage.

The treatment of this condition (senile degeneration of the endometrium) is simple and founded upon a well-known surgical principle, namely, drainage—persistent and prolonged drainage until the degenerative process has ceased and it is no longer necessary. Meantime, the irritation of the vagina and vulva may be relieved by any simple means which will avoid contact of the discharge. As to the method of accomplishing drainage of the uterus in these cases, there is much to be said in favor of negative electrolysis, and as much to be said against the methods employed for securing drainage in other conditions of the uterus, namely, forcible dilatation of the canal. The objection to forcible dilatation of the canal in the class of cases under consideration is that the structure of the cervix will tear before it will yield to dilatation. Curettage of the cavity of the uterus is

not only objectionable but useless, since there is absolutely nothing to be scraped away, the surface usually being as smooth as the palm of the hand. Likewise applications of astringents and other medicaments to the interior of the uterus are absolutely useless in these cases. Drainage, and drainage alone, is all that is necessary and all that need be done to effect a positive and permanent cure.

To secure drainage by means of negative electrolysis consists in passing through the canal a conical metallic electrode connected with the negative pole of the galvanic battery and employing a current of only 5 or 10 m. for a period not longer than three or five minutes, or just sufficient to secure relaxation and permit the electrode to move freely through the canal. At first the size of the electrode should be only that of the uterine sound or less, and as relaxation is secured the size of the electrode may be increased two or three times that of the sound. At first these applications may be extremely painful, but usually after the second or third no pain will attend them. They should be repeated every second or third day, and then continued twice or once a week to maintain relaxation of the canal and drainage which they afford. This should be continued until there is no longer any necessity for drainage. As soon as free drainage is established, the irritation of the vagina and vulva is at once relieved.

The advantage of employing negative electrolysis as a means for securing relaxation of the canal and drainage is, that no injury is inflicted, no anaesthetic is required, and the patient is not disabled. It can be carried out at the office, and though somewhat painful at first in some of these cases, the relief it gives more than offsets the pain that it produces. In other words, it accomplishes the purpose desired with the least possible inconvenience and, to my mind, the most satisfactory manner."—*Medical Review*, Vol. 41, No. 26.

FREQUENCY OF CANCER.

Dr. Louis Frank of Louisville, Ky., says of this:

"It is an appalling fact, recognized by all authorities, though they may differ as to the cause of cancer, and as to the rapidity

of increase, that it is far more common now than formerly, and that it is progressively and steadily becoming more widespread and causing more and more deaths each year.

In England and Wales in 1840 cancer caused one in 129 deaths, a mortality from cancer of 0.77 per cent. In 1896 deaths due to this cause were one in 22, a percentage of 4.54. Thus the proportionate mortality is four and one-half times greater now than it was half a century ago." The increase in women from 1851 to 1890 has been 91 per cent. Williams attributes this increase to the manner of living, and thinks that cancer can be abolished or lessened by cessation of gluttonous ways and habits of living.

Heimann's statistics show that in Austria in 1877 there were 2,952 deaths from cancer. In 1896 this had increased to 12,548. In the order of frequency these growths occurred first in the uterus.

In Park's statistics, based upon the number of deaths in New York alone, we find in 1887 there were in New York State 2,363 deaths from cancer, and 11,609 deaths from consumption. In 1898, just eleven years afterward, the death rate from cancer had increased to 4,456, almost double what it was previously, whereas the death rate from consumption had only gone up to 12,552. Park does not attribute this increase to improved diagnosis, as the reverse is rather true, since in many cases deaths formerly supposed to be due to cancer are now classified where they properly belong in other lists; also that many more cancers are cured than formerly. He makes one striking and startling statement, which is to the effect that if during the next ten years relative death rates are maintained, we shall find ten years from now, viz.: in 1909 there will be more deaths in New York State from cancer than from consumption, smallpox and typhoid fever combined. In the last fifty years a careful estimate of statistics from all countries by Williams shows that the cancer mortality has quadrupled itself, whereas the death rate from phthisis has diminished more than one-half. And this ascendancy, according to all authorities is still in force.

Park attributes the great increase of cancer to its infectiousness. We find, however, that the statistics of Park are ques-

tioned by Pryor, who says there are errors in the estimates, due to peculiarities displayed by disease and conditions influencing them, so glaringly apparent that no credence can be placed on such estimates.

Newsholme, of England, discusses Williams's statistics, and believes the increase is only apparent, due to improved diagnosis and careful certification of causes of deaths; but notwithstanding this, says that cancer kills annually three-eighths the number claimed by phthisis; that it is between three and four times as fatal as typhoid fever, and has a much larger death roll than whooping cough or measles, though the latter have a much larger field or population for operation.

In England, in the twenty-five years between 1848 and 1872, we find the total mortality to be 10,512,146, of which 177,300 died of cancer, or one in every 59 deaths. Of these, 123,433 were women.

In 1889 the returns of the Register General of England showed that one in every twelve females who reached the age of 35 years died of cancer.

In this country the total deaths from cancer in 1890 were 20,984, or one in every 2,984 of the population, the proportion to the total deaths being one in 41. In 1880 the death rate from cancer was only one in every 3,310 of the population, the proportion to the total deaths being only one in every 51, showing a decided increase, as you can readily see, in this period of ten years.

Estimated upon the population of today, we find that there are in these United States between 80,000 and 100,000 cases of cancer; McMurty places it at 100,000. Of these we may say that not less than 15,000 are cases of cancer of the uterus. In the State of Kentucky alone, based upon the population of one and a half millions, there are 2,500 cases of cancer. To bring this a little nearer home to you, upon an estimate worked out on the same basis, there are in the city of Louisville alone, with a population of about 200,000 people, 300 cases of cancer.

The health office of Louisville, Ky., shows that in 1895 there were a total of 3,510 deaths, of which 81 were from cancer, 18 of them being specified as of the uterus and 37 not specified at all. In 1898, out of 3,164 deaths, there were 121 from cancer, of

which 65 were unspecified and 23 specified as of the uterus. This year there have been thus far nine cases of the uterus in a total of 40 reported, 20 of which are not specified, with a total thus far of 1,236 deaths. This shows the local increase of the disease.

From all the statistics which we have been able to gather we find the average age at which cancer of the uterus occurs is about the age of 44 years. The earliest age in 500 consecutive cases of cancer of the uterus was $22\frac{1}{4}$ years.

Gusserow, by massing the statistics from a number of continental and English observers, found only two cases of cancer of the uterus in women under the age of 20 in 3,385 cases. Two cases of glandular cancer of the cervix have been reported by Schanta and Glatter occurring in patients under 17 years of age; Munde reports a case occurring at 18; Beigel and Schop one each at 19; Billroth one at 20. I have just seen a case occurring in a young married woman of 24.

These figures, I trust, will give you some idea of the prevalence of this disease and of its undoubted increase, not only in numbers, but in proportion to the number of persons living, for we find beyond peradventure of a doubt that this increase is absolute and real. For instance, in the statistics quoted above, in America ten years ago we find that the death rate from cancer per million of the living was 296, whereas today it is 319.

It is a very striking fact that among the blacks in this country cancer is reported to have been exceedingly rare before the abolition of slavery; since that time the liability has been steadily on the increase, so that we find in the modern negro cancer is a comparatively common disease. Among savages and in the uncivilized we find it is practically unknown. For instance, in the white race, which we may say is the civilized race, we find the death rate from cancer is 35 4-10 per 100,000 of the living, whereas in the other races it is only 19 3-10 per 100,000 of the living. The higher we go in civilization, the more cultured the community, the more highly educated and refined the people, there do we find cancer the most frequently."—*Louisville Monthly Journal of Medicine and Surgery*, Vol. 7, No. 2.

TREATMENT OF CANCER OF UTERUS.

Dr. H. C. Coe of New York City suggests:

"The revival of Freund's operation (originally attended with such a frightful mortality) indicates an earnest effort on the part of gynecologists to apply to the treatment of cancer of the uterus the principle of radical excision of diseased foci, which has been so successful in the case of the breast. Abdominal hysterectomy for cancer of the cervix, with removal of the broad ligaments, pelvic connective tissue and lymph glands, is rapidly gaining in favor. It certainly appeals to the modern surgeon as the method by which the ultimate results can be improved. While it is more difficult than vaginal extirpation, requires special skill, and is applicable only to cases in which the patient is able to support the strain of a lengthy operation, it is certainly an intelligent method of dealing with a condition which calls for the most radical treatment, if the results are to be permanent.

Assisted by previous catheterization of the ureters and the control of hemorrhage by ligation of the uterine arteries at their points or origin (or even of the anterior branching of the internal iliaes, as suggested by Pack), the operator is enabled to do his work with a thoroughness which would formerly have been regarded as impossible. While the primary mortality is relatively great (about twenty percent), it will undoubtedly be much reduced as the result of increased experience and technical skill.

Statistics are too recent to admit of any positive comparison between the ultimate results of the vaginal and radical abdominal methods; suffice it to say that it is being adopted by the most progressive surgeons, and definite data will soon be obtainable. As Picqu  and Mauc laire properly observe (*Annales de Gyn. et d'Obst trique*, June, 1899), the removal of cancerous foci from the pelvis is a widely different procedure from the dissection of the axilla or neck, and time must be allowed in order to perfect the technique before condemning it on account of the high mortality.

The limits assigned to this paper do not permit me to dwell upon palliative operations. I would merely add that the thorough use of the sharp spoon and cautery in cases unsuitable even

for amputation is often followed by surprisingly good results as regards the amelioration of symptoms and the temporary arrest of the disease.

To summarize briefly, successful operation for cancer of the uterus presupposes early recognition of the disease. The number of operable cases will only be increased by general education of the profession and laity regarding the vital significance of hemorrhage as an initial symptom. Every suspicious case should be submitted to the most rigid scrutiny, clinical evidence being supported by the microscope.

Before deciding that a case is favorable for a radical operation, a careful examination should be made under anæsthesia. Whatever method of operation is elected, it should be thorough. the common rule regarding the surgery of malignant disease applies to the cancerous uterus—unless the incision can be made in healthy tissue, well beyond the diseased area, and all outlying foci can be removed, the operation is palliative rather than curative. Hence the probability that abdominal hysterectomy will be the method of election in future.”—*Medical Review of Reviews*, Vol. 6, No. 6.

PERINÆORRHAPHY.

Dr. J. MILTON MABBOTT, of New York, in a paper read before the Hospital Graduates' Club, says in closing:

“Primary perinæorrhaphy is so frequently required that every obstetrician should be qualified to repair the perinæum at the time of injury. And the point upon which I would insist most strongly is this: *Make the sutures include enough tissue on both sides of the wound to enable them to exert their greatest traction in the right direction and hold the wound surfaces together in their natural relations.* Insert a sufficient number of sutures to secure perfect coaptation of surfaces. Sometimes a superficial suture will be required here and there between the deep ones. If necessary, employ an anæsthetic. Emmet was not far wrong in saying that ‘an operation on the perinæum should be done with the same nicety as an operation on the face.’

We can not expect primary union if we fail to secure primary coaptation. Surfaces separated by air, blood clots, or lochia can hardly grow together; and cicatricial distortions can not be expected to shape up into a proper perinæum.

"As Dr. Sands used to say of surgery in general, so it may be said of this operation, that 'bad results in the long run of cases depend upon bad surgery and not on bad luck.' Perineal lacerations, as a rule, are as simple as scalp wounds and should unite as kindly. A badly inserted suture, particularly when drawn too tight, is not only useless but literally a direct *draw-back*. It is avoidable and inexcusable."—*New York Medical Journal*, Vol. 71, No. 15.

19 Fifth Avenue.

STRANGULATED DIAPHRAGMATIC HERNIA.

Dr. S. J. MIXTER, of Boston, reported the following case at the meeting of the Massachusetts General Hospital Clinical Board, December 15, 1899:

"G. H. M., twenty-nine, single, plumber. Always well. Four days ago, following several minutes' violent exercise pumping at a pumping machine, he had severe pain near the navel and fell over in a state of collapse. Pain continued all the next day and he was given a laxative that night. The following day he was given an enema, which was followed by a small movement of the bowels. Has passed no gas since. Temperature has been normal till yesterday and pulse about 90; today, temperature 101° and pulse 145. Has had vomiting off and on for past two or three days.

Physical examination.—Well-developed and well-nourished, muscular man. Some abdominal distention, but no extreme tenderness, as is indicated by the fact that when he was about to leave his home for the hospital he jumped up and started to snap on his trousers in the usual way. Seen by Dr. Mixter in accident room. Operation was decided upon; ether.

Operation.—Abdominal incision five inches long in median line. Small intestine found to be greatly distended. Bowels

allowed to come out through the wound and kept warm with hot towels. Nothing found in pelvis or appendix regions. Small intestine punctured to allow escape of feces and gas. Intestine sewed with intestinal sutures and returned in abdominal cavity. Incision now enlarged upward to a coil of intestine found passing upward through middle of left lobe of diaphragm. It was impossible to pull the coil back into the abdominal cavity, so the opening in the diaphragm was enlarged anteriorly and outwardly about an inch. Dr. Mixter then passed his hand up through the opening and succeeded in pulling down this coil of intestine and also a large part of the great omentum.

The omentum and intestine were both gangrenous and the latter was perforated. Every respiration now sucked in air through the abdomen, just as the air is sucked in and out in a case of empyema. The patient was by this time in such a critical condition that the operation was brought to a close as soon as possible. The contaminated peritoneal surfaces were hastily cleaned. One towel was placed deep down against the opening in diaphragm and the upper end of long incision wicked, while the lower three-fourths of the wound was sewed up tight with interrupted silkworm-gut sutures; dry dressing and swathe. The patient did not recover from the shock and died in fourteen hours."—*Boston Medical and Surgical Journal*, Vol. 142, No. 12.

TREATMENT OF RETRO-DISPLACEMENT OF THE UTERUS.

Dr. T. L. Watkins, of Montgomery, Ala., says:

"In determining the best method of treatment in a given case, it is well, if possible, to determine the cause of the condition, as upon this may depend the question of success or failure. In addition to this, there are several questions which should be answered before treatment is undertaken. First: Is there any disease of the pelvic organs that would be benefited by operative measures? Second: Is it a case where a pessary can be fitted without difficulty? Third: Can the patient have intelligent medical care while wearing the pessary? Fourth: Is she willing

to give the time necessary for her recovery? Diseased appendages should be removed and the fundus suspended from the abdominal wall. If it is impossible to fit a pessary, this operation should be resorted to, otherwise your patient will not appreciate your efforts, and she will justly look for some one who will operate. It is unwise to send a patient away when she will not be looked after, as too long or improper use of this instrument will produce damage, which will be charged to the one who inserted it. As to the time necessary to wear a pessary for relief, I never attempt to say. At intervals of three to six months I remove it for a few days; if the organ remains in position, I discharge the patient. .

The best instrument is a hard-rubber Hodge, which is susceptible to slight changes by oiling it and holding it over the alcohol flame; this in my hands answers every purpose, and should be introduced with the patient on her back. When endometritis or laceration of the cervix with glandular infiltration exists, curettement and amputation of the cervix should be performed. These conditions should, of course, be corrected, whichever method is resorted to. Where strong adhesions or other intrapelvic complications exist, the use of the pessary is not to be considered. The abdomen should be opened, adhesions broken up, neoplasms removed, and the organ anteflexed and attached to the abdominal wall. In the case of illy developed fibrous structure, it is far better to suspend the organ than to attempt to correct it by the use of an instrument. These cases, as a rule, bear pessaries badly, but show marked relief when subjected to a careful operation.

I do not feel justified in taking up your time discussing the numerous operations that have been advocated by their various authors in the past few years. Many of them were conceived in sin, and are not worthy of the age in which they exist. The Alexander operation, so popular in this country, is a much-abused operation. It doubtless has a place in the list, but the cases to which it is adapted should be selected with care. It is difficult to perform, and a large number of reported successes are incorrect. I have done ventral suspension in cases where the Alexander operation had been performed, finding the uterus thoroughly retroflexed. Doubtless others of you have done the same thing. The objections so frequently raised to suspension are, as a rule, due to faulty technique. Difficulty during labor and

interference with the bladder are the results of including too much uterine tissue antero-posteriorly, and limiting too much the upward and downward movement of the organ. I have never seen any difficulty during labor after this operation when it has been performed according to the methods laid down by Dr. Kelly."—*New York Medical Journal*, Vol. LXXI., No. 12.

DERMOID CYST.

February 26, 1900, Dr. Lancaster presented before the Ramsey County Medical Society a specimen of a dermoid cyst, which was removed from a patient of Dr. A. J. Stone's; a married woman aged twenty years. She had been pregnant about eight months, and she felt in the region of the left ovary an unusual amount of pain, a smooth regular swelling appearing in that region. The diagnosis was made of an ovarian cyst. After her confinement Dr. Stone made an operation and removed the cyst, which is now presented to the Society and on opening it, some of the hairs found in it were over four feet long. The color of the hair was different from that of the patient. In this case the hair in the cyst is light whereas the patient's is dark. The doctor stated he remembered having seen a case of a dermoid cyst which was found to contain what appeared to be half of a human heart and the lecturer passed it around among the students, not telling them where it came from, and they were all of the same opinion that it was a perfect half of a heart.—*St. Paul Medical Journal*, Vol. II., No. 4.

CÆSARIAN SECTION.

In a comparative study of this and other methods of treatment for inducing delivery in contracted pelves, Dr. J. H. Beynon, of Newark, concludes:

"When facts and statistics are thoroughly studied, the following conclusions must inevitably fix themselves upon the mind of each and every competent and conscientious obstetrician of the present day.

(1) That the absolute indications for Cæsarian section are tumors in the genital canal, osteomalacic deformities, cicatrices

and contractions of the vagina, rupture of the uterus, woman dying near the end of pregnancy, irreducible impaction of a living child in transverse presentations, and pelvis with a live child and a conjugate diameter of 4.5 to 5.5 centimeters.

No less authority than Kelly, in his *Operative Gynæcology* makes the following statement: "The indication for Cæsarian section is *absolute* in all flattened pelvis with a live child and a true conjugate of 6.5 centimeters or less, or in a generally contracted pelvis of 7 to 7.5 centimeters or less;" furthermore, that "the indication for Cæsarian section is *relative* and competes with craniotomy when the child is alive in a pelvis measuring from 5 to 7.5 centimeters or less."

How to reconcile the above statements or differentiate the absolute from the relative, or vice versa, is not evident to me. Presumptuous as it may appear, the writer must take issue just here with the gentleman quoted. If absolute with a conjugate of 6.5 or 7 to 7.5 centimeters or less, the indication must of necessity be absolute still, with a conjugate of 5 to 7.5 centimeters, and if relative and competing with craniotomy with a conjugate of 5 to 7.5 centimeters, the indication, if figures do not lie, must remain relative and compete with craniotomy when the conjugate measures 6.5 to 7.5 centimeters or less. If the reverse is true, then the distinction is hair splitting, one so finely drawn as to be impracticable if not absolutely useless. A clearer and more comprehensive classification would present if Dr. Kelly's absolute indications were all placed under the head of relative indications, becoming absolute upon the indorsement or demand of one or both parents.

(2) That the indication for Cæsarian section is relative and competes with craniotomy in a pelvis with a live child and a conjugate of 5.5 to 6.5 centimeters, and in a generally contracted pelvis of 7 to 7.5 centimeters or less, but displace craniotomy only when subject to the indorsement or demand of one or both parents.

(3) That the indication for craniotomy is absolute when the child is dead and the conjugate measures 4.5 centimeters and upward.

(4) That symphyseotomy competes with and *always displaces* the relative indication of Cæsarian section in a pelvis with a

conjugate of 7 centimeters or more, and sometimes if the head is small in a pelvis with a conjugate of 6.5 centimeters or more.

(5) That symphyseotomy never competes with premature labor in pelves measuring 7 centimeters or more, and displaces it only when expressly and absolutely demanded by the mother, but under no circumstances does it displace premature labor when the conjugate measures less than 7 centimeters.

(6) That symphyseotomy may be viewed as an aid to premature labor when the head is too large to engage.

(7) That symphyseotomy rarely, if ever, competes with version or forceps in pelves when the conjugate measures 8.5 to 9.5 centimeters.

(8) That Cæsarian section, symphyseotomy, premature labor, craniotomy, version, and forceps, all have a definite place and relation in obstetrical operations, the success of which will, of course, always depend upon the acumen, skill and care of the accoucheur."—*Medical Times*, Vol. XXVIII., No. 3.

COLOCHOLECYSTOSTOMY.

At the conclusion of a valuable paper on "The Surgery of Biliary Calculi," Dr. William D. Haggard, Jr., of Nashville, Tenn., reports the following case:

"B. J. G., male, aged 27, had a severe attack of biliary colic attended with tenderness and jaundice in February, 1897. He had had several light attacks of hepatic colic some weeks before, and he had been in Johns Hopkins Hospital, Baltimore, awaiting operation, but improved, and so it was deferred. He was operated on after the severe attack in 1897, by Dr. J. F. W. Ross, of Toronto. A number of stones were removed, a fistula made and a drainage-tube kept in for two weeks. The fistula remained open until June, 1897, when Dr. Ross closed it by suture, and the patient, who had been in bed the whole of the four months, was up in a week. In November, 1897, he again had a number of attacks of colic and jaundice, which kept up intermittently until March, 1898, when Dr. Louis McLane Tiffany of Baltimore, opened the gall-bladder. As he found no stones, he

closed by immediate suture, fixed it to the abdominal wall, and closed the incision throughout.

In June of the same year, while still in the hospital, the patient was again seized with attacks of colic and transient jaundice, which, in the absence of Dr. Tiffany, induced his assistant, Dr. I. R. Trimble, to again open the gall-bladder for exploration. He wrote me that he found no stones, but thought he had succeeded in passing a rubber catheter through the cystic duct and thence into the duodenum. The gall-bladder was sutured and attached to the abdominal incision, which was closed by buried and superficial silkworm gut sutures.

On July 3, he received a blow on the head, which resulted in a fracture of the skull, which was elevated by Dr. Robert Pillow, of Columbia, Tenn.

In August, 1899, fourteen months after the third gall-bladder operation the pain and colic returned and was rather frequent and more severe than ever before. On October 1, he had an attack that lasted four days, and could obtain no relief. He came to see me in Nashville and, while there, had one of the most severe attacks of biliary colic I have ever seen. I gave him $2\frac{3}{4}$ gr. of morphine, hypodermically, in less than three hours without any appreciable effect on the pain. He was not accustomed to taking morphine, and after the operation $\frac{1}{2}$ gr. had a very satisfactory and complete effect.

On October 12, 1899, in the presence of jaundice which had existed fitfully for two months, I made an exploratory operation through the old scar parallel with the ribs. As the gall-bladder was attached to the parietes, it was opened, and a black, tarry fluid was found therein, and one large gall-stone, perfectly black and somewhat larger than a cherry-stone, together with some smaller crystal-like stones. An effort was made to catheterize the ducts, which it was reported had been done before without success. The gall-bladder was irrigated and temporarily packed with gauze. It was then dissected from the parietes below and a careful palpation of the ducts made, but no other stones could be detected. The adhesions were very considerable as the result of so many previous operations and such long-continued inflammatory trouble, and the gall-bladder was much contracted. I

did not wish to content myself simply with the removal of the two small stones, nor yet did I desire to close it up again or give him another biliary fistula, both of which had failed to give permanent relief. Kelly, Senn and Murphy had all advised a cholecystectomy, but after I found no calculous obstruction to account for the recent colic and existing jaundice, I concluded that it must be a chronic catarrhal cholangitis with intermittent inflammatory obstruction. I thereupon deemed it unwise to do a cholecystectomy, and decided to make a cholecystenterostomy. The duodenum, however, was so matted with adhesions and the gall-bladder was contracted to such an extent that I did not think I could make the anastomosis with safety. I, therefore, utilized the hepatic flexure and made a Murphy button anastomosis with gauze drainage. There was no untoward symptom. A little bile came out after the removal of the gauze, and on the third day, but none thereafter, and the drainage tract closed quickly. The jaundice faded, urine cleared up and he had two normal bowel movements a day, whereas, he had previously been obliged to take purgatives daily. He went home at the end of two weeks, with a clear complexion and a gain in weight; has had no trouble since, but the button has not passed."—*The Journal of the American Medical Association*, Vol. 35, No. 1.

APPENDICITIS IN WOMEN.

• After reporting several cases, Dr. J. H. Davenport of Providence, R. I., concludes:

"1. Appendicitis is not so rare a disease in woman as has been generally supposed.

2. On account of the smaller size and better blood supply of the appendix in the female it is less liable to become so acutely inflamed as to call for operation, and too, on account of the many diseases in the female with which appendicitis may be confounded, its true diagnosis is often overlooked.

3. In every abdominal section, for whatever purpose whatsoever, it is absolutely essential for the best interest of our patients to examine into the condition of the appendix.

4. Appendicitis is frequently observed as a complication or extension of many of the pelvic disorders of women, where it had not been suspected prior to operation.

5. Appendicitis may be the cause of salpingitis or right-sided pelvic suppuration, but probably more frequently happens as a result or effect.

6. Chronic appendicitis is sometimes found to be the sole trouble in those women of a neurotic temperament, when a previously false diagnosis of ovaritis or ovarian neuralgia has been made.

7. The differential diagnosis of appendicitis and the various diseases of women with which it may be confounded becomes comparatively easy if a complete history of the case is taken in connection with a carefully made physical examination."—*The Providence Medical Journal*, Vol. 1, No. 3.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

TONSILLAR OBSTRUCTION IN THE FAUCES AND PHARYNX.*

A. W. FRANCIS, M. D.

Observation in a general practice extending over a number of years has convinced me that tonsillar hypertrophy in its various forms is an exceedingly large field of study and one that is much neglected by the general practitioner.

The evil effects of these morbid structures in producing local and general disturbances are fully established. Clinical evidence is abundant to prove their direct relation to permanent conditions which seriously affect the welfare and usefulness of the sufferer in later life. In view of their present and remote consequences they appeal eloquently to our best therapeutical resources.

Much has been written on this subject by the specialist, but it has failed to find the response in the general practitioner which it merits. I cannot hope to make any contribution to the literature of this subject already extant, but would desire to emphasize the value of what has been written and to call attention to the importance of early recognizing and treating these affections, which, if neglected, must go on to swell the already large clinics of the aurist—the rhinologist and neurologist. This is the plea for my paper.

The various tonsils are disposed in the oro-and naso-pharynx in the form of a circle, whence the term "tonsillar ring." They consist, for practical reference, of three distinct masses of lymphoid tissue, viz: the faucial, the pharyngeal and the lingual tonsils.

The study of hypertrophy of the faucial and pharyngeal tonsils can hardly be disassociated, so intimate is their relation in cause to common symptoms. Prominent symptoms formerly

*Read before the Ohio State Medical Society at Columbus, Ohio, May 9, 1900.

ascribed to the faucial tonsil are now known to depend on the presence of adenoid growths in the pharynx. As these two conditions are so often associated in the same case, it is difficult to determine to what extent the faucial tonsil alone is a factor. As an element in producing obstructed respiration and impaired hearing, it probably plays a minor part, and its importance here has been exaggerated. However, these tonsils are often the site of painful inflammations, and further by their presence produce local disturbances in the circulation—inducing catarrhal conditions, and exciting various reflex troubles in the system at large. Probably the most important feature connected with their pathology is their relation to contagion. Their location and conformation offer an inviting soil for the lodgment and proliferation of pathogenic germs. It is observed that diphtheria and scarlet fever, in these cases, are more severe and malignant.

Whatever functions for good these structures may possess in their normal condition, it is certain that in their diseased states, they become a potent factor for mischief. Considering their actual and possible capacity for evil, it is surprising the number of cases that receive no treatment, or at most palliative, in anticipation of their final disappearance at puberty. At this time it is true they often undergo a natural involution, but in the meantime the patient is exposed to all the discomforts and dangers attendant upon the condition.

By far the most important member of this tonsillar group, in its single pathological significance, is the hypertrophied pharyngeal tonsil—the so called adenoid vegetations. Similar in structure to its fellows, its location gives it an advantage for evil, besides which they appear insignificant. Situated in the vault of the pharynx, it may become so enlarged as to fill completely the post-nasal space. Cases of adenoid vegetations are very commonly met with, but are frequently passed unrecognized. This condition manifests itself from the earliest months of infancy up to adult life and sometimes beyond—the vegetations varying in size and quality at the different ages. In young children they are soft and spongy, in older ones hard and fibrous. The presence of adenoids is usually suspected from

their symptoms alone, but can be recognized only with certainty by an exploration of the pharynx with the finger, when they can be felt as soft, irregular masses, clustered together and imparting to the touch a peculiar spongy feeling—compared to a bag of worms. They are very vascular and are easily provoked to bleed—the examining finger on being withdrawn will usually be found smeared with blood.

The symptoms of this condition vary with the age. It passes through the different declensions of slight catarrhal manifestations of infancy to the severe obstructive, and permanent lesions of older children. Young children with this condition are observed to have “head colds” continually in the winter months and in damp weather, and are the frequent victims of attacks of earache. These common symptoms should lead to an examination for adenoids. Later the obstructive symptoms predominate. The child is seen to breathe by the mouth. There is inability to blow the nose. An alteration in the quality of the voice by which the nasal consonants are not properly pronounced—The voice loses its musical quality and becomes harsh and wooden. The mouth is kept wide open during sleep—when the respirations are noisy and snoring. Its rest is broken and troubled. It tosses about in the vain effort to find a position in which breathing is easy. During the day it appears dull and stupid. Soon there is exhibited a marked depreciation of health;—general malnutrition comes on and various reflex neuroses develop. In time the peculiar physiognomy characteristic of the condition is plainly manifested.

The most important feature connected with these growths is its relation to deafness. In a large proportion of cases the hearing is impaired from mechanical pressure, and from frequent attacks of otitis permanent deafness may ensue.

What has been said regarding contagion in the faucial tonsil holds equally true in this condition. Their influence for evil can hardly be over-estimated, and in consideration of their important bearing on the health and usefulness of the patient, they should excite our keenest solicitude.

Less by far is generally known regarding hypertrophy of the lingual tonsil than of the other members of this group. Even

the literature of the subject is scant, and judging from its paucity one would suppose it to be a rare condition.

On the contrary, we find upon examination that it is comparatively frequent and its diagnosis easy. It differs from the other members in that its hypertrophy is mostly seen after adult life. It is recognized by drawing the tongue well forward where there can be seen by means of the laryngeal mirror—under good illumination—instead of the normally smooth base of the tongue, a number of broad granulations of varying sizes, springing from either side of the median line. These granulations are sometimes so abundant and prominent that the epiglottis seems buried in them. In these cases they manifest their most characteristic features.

The main symptoms of these overgrowths are, the feeling of a foreign body or lump in the throat; frequent and ineffectual efforts to swallow something that appears beyond reach; sensation of constriction about the throat, the so called *globus hystericus*; frequent hemming and clearing of the voice; voice fatigue after moderate effort; evening hoarseness; an ill-defined uneasiness in the throat; the loud, brassy cough at puberty; various reflex nervous symptoms, as palpitation of the heart and spasmodic asthma. Occasionally the spitting of blood. In some cases in which this hypertrophy is present in only a moderate degree, no symptoms are complained of, but the persistence of any or all of the characteristic manifestations of this condition should lead to an examination for its presence. On account of the greater frequency of this condition in women we are very liable to regard the symptoms as mild manifestations of hysteria. We should not be led into this odious diagnosis until this center of reflexes is fully explored.

In regard to the treatment of these various affections it is found that constitutional and topical measures are largely unsatisfactory in their results. The only reliable means of disposing of these structures is by some selection from our surgical resources. Aggravated and complicated cases should be referred to the specialist unless the physician by a course of training has acquired the necessary skill and technique to effect their satisfactory removal.

Ripley, Ohio.

SELECTED ARTICLE.

TREATMENT OF FRACTURES OF THE FEMUR IN CHILDREN.

HENRY R. WHARTON, M.D., PHILADELPHIA, PA.

Surgeon to the Children's and Presbyterian Hospitals of Philadelphia,
Demonstrator of Surgery in the University of Pennsylvania.

The treatment of fractures of the femur in infants and children presents some difficulties which are not encountered in adults, such as arise from trouble in restraining the movements of the patient, from the necessity of lifting the child from the bed if it is taking the breast, and the soiling of the dressings by the evacuations from the bladder and bowels. On the other hand, the deformity is usually less marked than in adults, and if present, is more easily corrected.

In infants and young children I have found that the line of fracture is usually more or less transverse, and that marked obliquity of the line of fracture is the exception; the fracture resulting most commonly from direct violence, such as a heavy body falling upon the thigh, or the wheels of a wagon passing over it, and not resulting, as in adults, from indirect force, such as falls upon the feet. Fractures in this class of patients are also often incomplete, certain fibers of the bone giving way, while others are only bent, and there is also in many cases a more or less incomplete rupture of the periosteum, which tends to prevent marked displacement of the fragments. The transverse line of fracture, the incomplete division of the fibers of the bone, the incomplete rupture of the periosteum, and the diminished muscular force render the deformity, both angular and shortening, usually less marked in fractures of the femur in this class of patients than in adults suffering from similar injuries.

I do not mean to say that one does not occasionally meet with fractures of the femur in infants and children in which there is marked deformity, but I think these are the exceptions, which can usually be accounted for by special conditions existing at the seat of fracture. I have also been impressed with the liability of children suffering from rickets to fracture of the femur, and

here the deformity, added to that resulting from rachitis, often gives rise to a very complicated deformity.

In incomplete fractures the deformity may be slight, or may be very marked. In the latter case it usually consists of a marked anterior or an outward bowing of the femur.

Various methods have been suggested in the treatment of fractures of the femur in infants and children, such as extension and counter-extension with lateral support by splints, Bryant's method by vertical extension, Van Arsdale's triangular splint,* and the plaster-of-Paris dressing.

The plaster-of-Paris dressing is highly recommended by some surgeons, but has not been satisfactory in my experience, from the fact that the dressings soon become soiled by the evacuations from the bladder and bowels and require frequent renewal, which causes the patient much discomfort, unless an anesthetic be employed. If the plaster-of-Paris dressing is employed the patient should be anesthetized, and after the deformity has been corrected the limb and pelvis should be covered with a flannel bandage, the bony prominences being well covered with layers of cotton. The plaster-of-Paris bandage should be applied while extension is made with the patient's hips resting upon a pelvic supporter, so that the bandages can be applied to extend from the foot, covering in the leg and thigh and including the pelvis, and the limb should be held in the corrected position until the dressing has become firm. The ambulant method of treatment has also been recently recommended; this seems to me to possess no advantages over the ordinary methods, as children usually bear confinement to bed for a few weeks very well; the loss of this time and the early use of the injured limb is a matter of no importance to this class of patients.

A considerable experience in the treatment of fractures of the femur in infants and children has led me to adopt the following line of procedure: In infants or children under eighteen months of age the shortening is usually not marked, and I find that the use of continuous extension is unsatisfactory, from the fact that the child has to be lifted to be nursed, if it is taking the breast, and when the napkin is changed. In these cases the treatment is as follows: The injured thigh is compared with its fellow, and

deformity, if present, is noted, and measurements are taken to ascertain if shortening is present. If there is angular deformity or bending of the bone from incomplete fracture, this is corrected by manual force, and if the fracture be an incomplete one, in the manipulation necessary to correct the deformity the unbroken fibers of the bone often give way, rendering the fracture a complete one; this I consider no disadvantage. An anesthetic may be required if the manipulation causes the patient much discomfort. The limb is next held in the corrected position, and a binders' board splint is cut long enough to extend from the sole of the foot to the ribs, and wide enough at its upper portion to include one-half of the body and pelvis, and also wide enough to include one-half of the thigh and leg. This is soaked in boiling water and moulded to conform to the outer portion of the body and pelvis and to the thigh and leg, being cut to fit the groin. This is next well padded with cotton, and then moulded to the foot, leg, thigh and body, and held firmly in place by the turns of a bandage. This splint fixes the knee- and hip-joints. In a few hours, when it has become firm, the patient can be lifted when the bed is changed, or to be nursed, without discomfort or without displacing the fragments. This splint is not changed for a week, unless it becomes soiled, and is then reapplied, or a fresh splint is applied in the same manner. The dressing is usually worn for four weeks, and then can be dispensed with, as union is generally quite firm at the seat of fracture by that time. In infants this method of treatment has in my experience given most satisfactory results.

In the treatment of fractures of the femur in children over eighteen months of age, I usually apply extension, counter-extension and lateral support, the dressing being, with a few modifications, that which is employed in adults for a similar injury. I have found that children of this age bear the confinement to bed very well. In the dressing of these cases I consider the use of an anesthetic essential when the first dressing is applied. Having administered an anesthetic, an adhesive plaster extension apparatus is applied to the leg, extending up to the knee. This consists of a strip of resin plaster (I prefer to use the resin plaster rather than the rubber adhesive plaster, as it is

much less likely to irritate the skin), $2\frac{1}{4}$ inches in width, which is long enough to extend from each side of the knee and form a loop about four inches below the sole of the foot; in this loop a perforated wooden block is secured, and faced for a certain distance by another strip of plaster of equal width, which is long enough to extend above the malleoli, thus preventing the plaster from adhering to them and causing pain. The block is next secured by a few circular strips. The strip of plaster is then warmed and applied to the lateral aspect of the leg as far as the knee, and is secured to the leg by three or four circular strips of plaster two inches in width, encircling the leg, one just above the malleoli, one at the middle of the leg, and a third just below the knee. A roller bandage covering in the foot and leg is next applied over this to the knee, extension is next made from the leg, and by manipulation and extension the deformity is corrected. Two pieces of binders' board are next cut, the outer one long enough to extend from the great trochanter to a point a little below the knee-joint, the inner one of sufficient length to reach from the perineum to a point a little below the knee-joint; these should be made to conform to the shape of the thigh, and each should be wide enough to include a little less than one-half of the circumference of the thigh. These splints are next dipped in boiling water to soften them, and are then fitted to the external and internal aspect of the thigh; they are finally padded with a layer of cotton wadding, and firmly secured to the thigh, while the limb is held in the proper position by an assistant.

The patient is next placed in bed, upon a firm mattress, and two bran bags about three inches in diameter are placed upon each side of the limb, the external bag being long enough to extend from the axilla to the foot, and the internal one from the perineum to the foot. Two wooden splints, of equal length and about four inches in width, are next placed outside of these bags, and are held in position by strips of bandage passed under the limb and body, and secured so as to hold the bran bags and splints in contact with the limb and body. A cord is then attached to the block of the extension apparatus and passed over a pulley fastened to the foot of the bed. The lower end of the bed should be elevated a few inches by blocks placed under the feet, and a

weight of from six to eight pounds should be attached to the cord. Some portions of this dressing may require renewal in a few days, but the extension apparatus does not usually require renewal. If the binders' board splints become soiled from the urine or fecal evacuations, they can be replaced by new ones without difficulty. In male children the urine can be passed into a jar or urinal, but in female children the dressings are more likely to be soiled and require more frequent changes. When the evacuations from the bowels occur, the internal splint and bran bag are removed, and as the ordinary bedpan is too large to be slipped under the buttocks, I usually find that a flat tin plate, covered with a piece of muslin, can be slipped under the buttocks to receive the fecal matter.

This dressing is employed for about four weeks, and if union is firm the extension is then removed, and the moulded binders' board splints are reapplied and allowed to remain for two or three weeks longer, the child being allowed to sit up in bed and move the limb as he desires. At the end of six weeks, if he is old enough to use crutches, he is allowed to go about on these for a few weeks. I never permit these cases to walk upon the injured limb until the expiration of eight weeks, for I have seen cases in which very marked bending of the limb, or consecutive shortening, occurred from patients being allowed to walk upon the limb at the end of five or six weeks. Refracture of the bone I have also seen occur upon slight provocation when the patient was allowed to walk about before the callus at the seat of fracture was sufficiently consolidated.

The results of treatment of fractures of the femur in children are usually satisfactory. The shortening is usually slight, not more than one-fourth to three-fourths of an inch, and indeed in some cases, especially fractures involving the lower third of the bone, examined a few months after the injury, the injured limb by measurement may be found to be slightly longer than the sound one. This may be accounted for, according to Verneuil, by increased growth of the injured bone, due to irritation of the lower epiphysis from the traumatism. Angular deformity is usually not present if the deformity was satisfactorily reduced in the early treatment of the case.—*Therapeutic Gazette*, May 15, 1900.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, May 8, 1900.

VICE-PRESIDENT, DR. T. S. WESTCOTT, IN THE CHAIR.

Dr. D. J. M. Miller read a brief report of a case of "Acute Leukemia" in an infant of 8 months.

The case was that of a male infant of healthy parentage, who had always been well until 6 months old, when a pustular eruption appeared in the left axillary and mammary region. This healed in four weeks, leaving slightly depressed, bluish white scars, without specific pigmentation. With the onset of the eruption the infant lost flesh and color, and suffered constantly from digestive disturbances. About a week before it was seen, marked epistaxis had occurred. The patient was extremely pallid and feeble, with cold and edematous extremities, and feeble heart and pulse. No evidences of syphilis, rickets, or enlarged lymph nodes could be discovered. The belly was greatly distended, but there was no ascites. The liver extended 2 inches below the costal border. The spleen was enormous, reaching downwards and obliquely, beyond the median line to within 2 inches of the right Poupart's ligament. Its surface was smooth, hard, painful on pressure, and the notch could easily be felt. The blood showed 1,653,000 R. B. C. and 326,500 W. B. C., a proportion of 1 to 5. The red cells were much altered in shape and size. Two days later the house was visited for the purpose of estimating the hemoglobin and making a differential count, only to find the infant had died that morning. No autopsy or permission to obtain specimens of the blood was permitted.

The case was reported with great hesitation, as no scientific purpose is served, and diagnosis is not certain in disease of the blood unless the latter is carefully studied, yet the rarity of leukemia in infants, and the probable correctness of the diagnosis, makes the case of interest. In the absence of a blood count,

and because of the difficulty in distinguishing the blood affections of infancy, the case could not be classified, but it was probably of the spleno-myelogenous type, although the lymphatic variety is more common in childhood and in the acute forms. The possibility of the specific nature of the skin eruption was discussed and dismissed because of the brief and favorable course without medication and the absence of other specific signs in the child or its parents. Attention was called to the acute course—not over 2 months. This is within the limit fixed for acute cases by Ebstein, namely, 9 weeks. This form is very rare in infancy and childhood. Morse only found 6 acute cases at this period, and but one in an infant, while Fussell, Jopson and Taylor could discover no instances below 2 1-2 years.

Dr. L. C. Peter reported a case of “Facial Diplegia” due to “Middle Ear Disease.”

The patient was a girl of 14 years, who had an attack of scarlet fever in November last, during the second week of which she had pain in both ears followed by free discharge. A few days later she developed a double facial palsy. The forehead was smooth, the face devoid of expression, and she could not close the eyes by voluntary effort and could not contract the muscles over the eyes. She had difficulty in holding liquids in her mouth, and had lost the power of taste on the tip of her tongue. Improvement progressed rapidly on the left side so that her appearance now is that of right-sided facial palsy. The causes ascribed to the condition are, middle ear disease; pontine disease; syphilitic and other disease of the nuclei and the nerves; diphtheria, as in a polyneuritis in which the facial nerves may share; and cold. In children, also, the condition may be congenital, or an injury at birth by the blades of the forceps may cause the palsy.

DISCUSSION.

Dr. Hand: I was very much interested in Dr. Peter's mention of the possibility of facial palsy being induced by a polyneuritis following diphtheria. I have never before seen such a possibility mentioned, and have never heard of such a case. I am interested in knowing whether Dr. Peter, or any other

member of the Pediatric Society, has ever seen a case of this character.

Dr. Peter: I have never seen a case caused by diphtheria and do not remember of any reported in literature. I spoke of the possibility of such an occurrence, however, because it is mentioned by Gowers and, I think, by Dereum.

Dr. Alfred Hand reported a case of "Intussusception" in an infant 4 months old. The colic began with colic and diarrhœa and there soon developed vomiting, and the passage of blood and mucus from the bowel; the tumor was palpable in the line of the descending colon. Reduction was accomplished by the injection of a pint of salt-solution, the syringe being elevated two feet above the bed on which the child's shoulders rested, while the body was held up feet foremost. At the same time the tumor was gently manipulated and disappeared as the abdomen became distended. There was a subsequent enteritis with signs at one time of a recurrence of the intussusception, which disappeared under the use of opium. Recovery ensued in ten days.

DISCUSSION.

Dr. Jopson: I saw the case only once, at the time mentioned by Dr. Hand. At that time, if recurrence of the intussusception had occurred, it had been spontaneously reduced. The child was calm, its expression placid, and there was no tumor. I think that Dr. Hand's explanation of the recurrence of symptoms is a very reasonable one; that is, that there had been an enteritis following the reduction of the intussusception, and that this had given rise to secondary symptoms of irritation, the mucous stools, etc.

Dr. Miller: I should like to call attention to the fact that very often in these cases there is no discharge of blood or mucus, and the only signs are those of obstruction of the intestine. Such a case occurred in a child of a friend of mine, a physician in a neighboring city. The patient, a babe of 8 months, was taken ill with severe vomiting and pain in the abdomen, and the condition had become so bad after 24 hours that the father decided to operate. Operation was done, and an intussusception was found. At no time during the attack was blood or mucus

seen. I believe that cases of intussusception should be operated upon as early as possible. Statistics show that about 40 per cent are saved if operation is undertaken in the first 24 hours, and the prognosis of the operation becomes progressively worse in accordance with the time that it is delayed. If injections are used it should be with very great care, and I do not believe that the height of the water-contained should be more than 2 or 3 feet.

Dr. Hand: The height at which I used the container was two feet, but I would call attention to the fact that the child was held by the heels, and its hips were therefore somewhat elevated. Consequently the real fall of the water was somewhat less than two feet.

REVIEW OF PEDIATRY.

TETANUS.

Dr. E. K. LOVELAND, of Watertown, Conn., reports the following case:

"During the night of September 19th, I received a hurried call to see a child. The messenger said the little patient had just had a severe convulsion, and he wished me to get there as soon as possible. On arriving at the house about an hour later, I found a healthy-looking, well-nourished, plump, and exceptionally bright-appearing, twenty-months-old girl sitting in the lap of an anxious mother. On inquiring into the history of the case, I found that the child had been unusually healthy during her entire life up to the present sickness, which commenced two days before, when it was noticed that she awoke from her afternoon nap with a sudden start, crying. Her parents thought nothing in particular of this at the time, as the child had played exceptionally hard before her nap and continued to do so during the rest of the day. That night the child awoke once or twice with a sudden start, crying for a second or two as if in severe pain, but dropped off to sleep again very soon, and the parents attributed it to her having become over-tired the day before.

The following day she seemed well and had a good appetite, but during the night that followed, she had a repetition of the symptoms of the night before, except that the spasms of crying and sudden awakening seemed to be more severe; but in the morning she seemed quite bright again and also through the day, eating well; but they noticed that she acted as if her throat were a little sore. The next night (September 19th), the little one awoke suddenly out of a sound sleep, and crying out as before went into a convulsion, upon which they sent for me. At this time when I reached there, as I have already stated, she was very bright, sitting in her mother's lap, but had a temperature of 100° F. with a tense, rapid pulse. She dropped to sleep repeatedly while in her mother's lap, as often as once in five minutes, and each time awoke with a terrible jump and a contraction of the muscles of the back of the neck and throat, which lasted but a few seconds and then passed off, and the child again dropped off to sleep. On trying to open her mouth to examine her throat, I found that I could not separate her jaws, which were tightly closed, and although she was a bashful child, and generally cried when strangers were present, yet she did not do so now. The parents said that they had also tried once or twice that day to see her throat, but could not get her mouth open. I left her some bromide, also some aconite to reduce the fever and tension of the pulse.

"I called the following morning and found that she had had no more convulsions nor much sleep since the night before, owing to the fact that she could sleep but a few minutes before she would be awakened by a sudden contraction of the muscles, followed by a peculiar cry, probably due to pain; but she would not weep, nor did she from now on, during her entire sickness. The muscular contraction and cry during the past twelve hours had not seemed to be quite so severe, probably due to the bromides; her temperature was now 99° F. and the pulse was not quite so full and snappy as it had been the night before. When evening came I found her with a pulse more rapid and fuller, with a temperature of 101½° F., and she had had two spasms during the day; the jaws were tightly locked, and in trying to open them they were strongly forced together and closed so firmly

upon the spoon handle that it was really with difficulty that I could remove it, and on doing so I found the print of her teeth upon the spoon; the patient immediately went into a spasm, probably due to the irritation, in which the opisthotonos was very marked and there was a marked sardonic grin. I then felt confident that I had a case of tetanus to deal with, and, although the parents had told me two days before that there were no scratches, cuts, or sores of any kind on the child, yet I examined her carefully myself to see if I could find any kind of flesh wound. On the calf of her leg I found where there had been a slight scratch, said to have been three weeks old; it was about a half inch long and the scab had already dropped off; there was no inflammatory action present, it being entirely healed and well. There was only one other mark anywhere on the child's skin, and that a very small scar, over the left eye, which was due to a dog having bitten her five months before, but there was no inflammation here nor did any develop during her sickness, and the dog is still living and well. There seemed to be considerable trouble somewhere in the throat, as there was a large amount of ropy mucus, mixed with pus and blood, with a powerful odor, which was constantly discharged from both nose and mouth, and her neck was swollen over the tonsils; but as yet I had been unable to get her mouth open enough to examine her throat. I left instructions with the nurse to increase the dose of bromides and give three grains of chloral each three hours. The next morning (the 21st) she had slept more, and yet had had two or three spasms during the night. She was still taking some nourishment from her nursing bottle, she herself folding the rubber nipple and crowding the same between her teeth at such times as she was able to get her teeth apart, the opening probably amounting, at the most, to something less than a quarter of an inch. I wished for counsel, and Dr. E. C. French, of Watertown, met me with the patient that afternoon. We considered the antitoxin treatment, but it was not thought favorably of by the family and we did not press it. We now felt that she was getting neither the nourishment nor the stimulant by the mouth that she needed, so we commenced giving her pre-digested food with stimulants by enema; also the chloral and bromides with a very little morphine were given by the rectum, and pushed almost to the extreme of

tolerance during the night, as the spasms and opisthotonos had been repeated at intervals of a very few minutes all day, and the risus sardonicus was now almost constant. The child had worked at her nose almost constantly during her sickness, crowding her little fingers into her nostrils as far as she could. I examined her nostrils as far back as possible, using my head mirror. As far back as I could see there was considerable inflammation, and at this time there was an increase of the flow from the nostrils of a sero-sanguineous pus, which had an extremely sticky consistency, and this continued to increase up to the child's death, four days later.

"The next day the temperature went down to normal, where it remained. The pulse was short and snappy, but was readily softened by the use of *veratrum viride*. The following day the jaws relaxed fully three-quarters of an inch, and the spasms were not so intense (probably due to the use of anodynes), and, on examining the posterior nasal pharynx with a head mirror, I found quite a large sore on the back of the mouth surrounded by a boggy, honeycomb tissue which involved uvula, tonsils, base of the tongue, and particularly the palate, and this was, I believe, the original site of the infection. I then asked if the child had at any time been putting things into her mouth while at play from which she could have received any injury. The parents recalled that, two or three days before she was taken sick, she was playing in the attic with a kit of old cobbler's tools, belonging to her father, and they thought that she put some of the tools in her mouth, and said that she might have got scratched in that way, although they did not remember hearing her complain. My belief is that she, while playing with the rusty nails, awls, etc., to which more or less earth was adherent, put them in her mouth, and from these received a slight scratch on her palate, and this was the source of tetanus infection."—*Medical Record*, Vol. 57, No. 9.

THE PREVENTION OF DISEASES OF THE EYE DURING CHILDHOOD.

E. W. Stevens, M.D., Denver, Colorado, in a paper read before the Denver and Arapahoe Medical Society, March 27, 1900, says:

"The lamentable loss of sight during childhood, from traumatism, is owing chiefly to three causes: The criminal carelessness of parents and nurses in permitting small children to have sharp-pointed instruments for playthings, the deadly toy pistol, and the use of the Fourth of July fire-cracker. Of the large number of children who have escaped loss of sight in one eye, but suffer from great depression of vision as a result of injury, we have no record, but as children furnish a large number of all the injuries due to explosives in this country, their number must be considerable. Most of these injuries are plainly avoidable.

Strumous ophthalmia or phlyctenular kerato-conjunctivitis often causes damage to sight by the formation of opacities of the cornea or the production of irregular astigmatism. Occurring, as it most frequently does, in children with a tendency to granular enlargement and to catarrhal affections of the whole cephalic mucous membrane, most cases of this disease can be prevented by plenty of pure air, attention to proper diet and prompt treatment of catarrhal diseases of the nasal passages.

Most cases of the disease can be traced directly to fried foods, tea, coffee, cake and sweetmeats. Parents can not be impressed too frequently with the fact that the diet of children should be made up largely of milk and well cooked farinaceous foods.

The treatment of strabismus by the use of atropin, the correction of errors of refraction, and the employment of measures aiming to improve the vision in the deviating eye, is one of the most striking examples of what can be accomplished by preventive medicine.

Most cases of squint are capable of cure, without operation, when they come under the care of an ophthalmologist at an early stage. At first the squint is usually periodic, coming and going with accommodating effort or when the child is tired, but in time becoming continuous. Chronic monocular squint is always at-

tended by the loss of binocular vision and the suppression of sight in the deviating eyes, the vision, in many cases, being reduced to the counting of fingers at the distance of a few feet. Since squint generally begins in early childhood, the parents frequently neglect to seek the advice of an eye surgeon, from a belief that owing to the tender years of the child, nothing can be done to remedy the condition. The modern method of measuring refraction by the shadow test has revolutionized our treatment of strabismus. It is often, therefore, an important question to decide at what age the required glasses can be worn. When needed, the glasses should be worn as soon as the child can be controlled, and many children at the age of three years wear glasses with a keen appreciation of the improvement in vision derived from them.

Before the child is old enough to wear glasses, the use of a cycloplegiac prevents the squint from becoming fixed. It may be used in both eyes to prevent accommodative effort, or in the better eye alone in order to blur its vision and induce the little patient to use the deviating eye. A shade worn before the good eye often accomplishes the same result.

In 1800 Dr. A. G. Beer first directed attention, in a treatise entitled "Healthy and Weak Eyes," to the fact that the requirements of school life resulted in the impairment of vision of the eyes of many children. This point has been investigated by many competent observers in this and other countries and the eyes of our 200,000 pupils of all grades have been subjected to a critical examination. This investigation has shown that modern school work proves injurious to the eyes of many children and disastrous to the sight of others. From the kindergarten and primary school up to the universities the same effects have been observed, viz.: Many children enter school life with congenitally defective sight which not only hinders them in the school work, but often leads to permanent injury of the eyes. These congenital ocular defects are nearly always hyperopia and hyperopic astigmatism. In this country congenital myopia is extremely rare, but under the strain of an ambitious school curriculum many children acquire a progressive form of myopia, due to the stretching of the tunics of the eye-ball.

The amount and degree of myopia among school children are found to be directly dependent upon (1) the age at which near work is done; (2) the number of hours per day the child has been thus occupied; (3) the disabilities under which the tasks are performed—notably errors of refraction, poor light, vicious habits of study, ill health, etc. The admirable investigations of Risley and Randall among the school children of Philadelphia showed that in the primary grades, with an average age of eight and one-half years, the per cent. of myopia was only 4. In the same school, with an average age of eleven and one-half years, the percentage of myopia was 8. In the grammar school, with an average age of fourteen years, the percentage of myopia was 11. While in the normal school, with an average age of seventeen and one-half years, the myopia was 19 per cent.

Dr. Hasket Derby examined 254 students at Amherst College and four years later found not only that the 35 per cent. of myopia present at the first examination had increased to 47 per cent., but that the average degree of myopia had advanced from 1.8D to 2.4D. These students were from nineteen to twenty-six years of age and therefore beyond the years of greatest liability to progressive increase of myopia. The painstaking observation and study of modern ophthalmology has served to demonstrate forcibly the truth of the teachings of Donders regarding myopia, viz.: "The progressive elongation of the eye-ball and progressive short sight advance together and this advance is an actual disease. I maintain, without hesitation, that a short-sighted eye is a diseased eye. Progressive short sight is, in every case, ominous of evil for the future, for if it remains progressive, the eye soon develops painful symptoms and becomes less equal to its work and not infrequently at the age of fifty or sixty, if not much earlier, the power of sight, either from detachment of the retina or from hemorrhages or from atrophy and degeneration of the yellow spot, is irrecoverably lost."

The proper care of the eyes during school life includes not only the testing of the vision of every pupil at the commencement of each school year, and sending those who are found to have defective sight to an eye surgeon to be measured for glasses, but it also includes proper

illumination of the school room and the avoidance of prolonged periods of near work. It implies, moreover, improved, larger type in the text-books. It often happens that children who begin their school work with normal vision and a little or no refractive error, at the end of school life are found to have myopic and diseased eyes.

Clearly the most important therapeutic agent is systematic prevention. With most diseases this is only a growing possibility, but in many affections of the eyes which impair vision or end in blindness, the dissemination of exact knowledge of the causes of those affections among physicians, parents and teachers, and the adoption of rational preventive measures will materially reduce the number of the vast army of totally blind and of the larger army which is crippled in the struggle of life by defective sight.—*Colorado Medical Journal*, May, 1900.

CONSTIPATION.

Dr. C. G. Slagle says: "Probably the best means of overcoming constipation in young children (as suggested by Holt) are diet, habit, massage and an occasional enema, or suppository. Diet can be rendered laxative by the addition of some of the malt preparations, fruit juice, etc., or of milk by adding cream and sugar water (one or both). If a child two or more years old, less white bread, toast, crackers, potatoes, etc., and more green vegetables, oatmeal, graham, corn or rye bread, and no opiates and carminatives—as astringent teas, etc. The gluten suppositories of the Health Food Company are best for continuous use, as glycerine suppositories are too irritating to be long continued.

The alimentary of nurslings: A little sugar water (after Jacobi), cow's milk four parts to one of sugar water, and rectal lavage with a urethral catheter (two tablespoonfuls of glycerine to one litre of warm water), or two tablespoonfuls of olive oil with the yolk of one egg to four drachms of water, etc.

Massage by rubbing the abdomen in one of two ways has been recommended by Holt: thus beginning at the right groin, the hand is carried up to the ribs, then across to the opposite side, then down to the left groin, superficially at first, then with deeper pressure as the child becomes accustomed to it. The

second method is by rubbing the deeper parts with a circular movement, the fingers, not moving on the skin, making a series of small circles, beginning at the right groin and following the same course as in the other method, these movements to be employed six or eight minutes twice daily at any time, excepting never soon after a meal.

For special movement of the bowels in an infant or young child, an injection of sweet oil, a tablespoonful, or glycerine, one-half teaspoonful to a tablespoonful of warm water, or tepid soap and water, a gill to a pint, according to age, or a glycerine suppository, may be employed, but none of these are to be used habitually, only occasionally in emergencies, to supplement other less objectionable measures, while you are endeavoring to establish "a moving habit" of natural movements.

This subject, constipation, emphasizes the importance of studying children's diseases separate and apart from those of adults, as the causes, nature and management are very markedly diverse from those of later life."—*Northwestern Lancet, September, 1899.*

TREATMENT OF WHOOPING-COUGH.

Dr. WALTER A. DUNCKEL, from a study of 261 cases seen in the New York Dispensary, makes the following suggestions:

"Speaking of treatment, belladonna, when indicated by the severity of the paroxysms, was preferred above other drugs on account of safety, tolerance, and expediency. Given in increasing doses it occasionally ameliorated the severity of the seizures. In addition to this a supporting treatment of cod-liver oil and malt preparations was prescribed. That the mothers had faith in the latter was shown by the regularity of their return for the "thick medicine." They cared little for other medication. Antipyrin was prescribed for several cases, in doses of gr. ii, combined with potassium bromide gr. iv., but was discontinued, as these moderate doses were ineffectual. The drug being a depressant it did not seem safe to prescribe it in large doses unless the patient could be kept under the most careful supervision. While there are instances when the disease is exceptionally severe, and vigorous measures may be demanded, it does not

seem good therapy in the cases of average severity to attempt to substitute a drug danger for the danger lurking in the disease, unless the former can be proved the less harmful measure. Bromoform has not been prescribed during my service. My predecessor, Dr. John H. Huddleston, made use of it in several cases, and to him I am indebted for the following: 'In some an improvement in the severity of the paroxysms without any change in their frequency was reported. Too much reliance could not be placed in these statements, and whatever improvement there might have been did not compensate for the danger of unequal dosage when given in a mixture. On this account its use was discontinued.'"—*Medical Record*, Vol. 57, No. 11.

INFANTILE DIARRHŒA.

We believe that in a severe case of summer diarrhœa the first indication is to wash out the stomach, remove fermenting material, and prevent the absorption of toxic materials from the gastro-intestinal tract. This lavage need not be repeated. The intestines should be washed out frequently, however. It removes peccant material; it stimulates peristalsis, which also helps to remove undesirable irritating substances, and it supplies water to the infant; a very useful measure, since it is well known that the child is water-starved. A stiff rubber rectal tube, such as used for adults, may be used without fear. Too much pressure should not be employed, however, in forcing water into the intestines as it is possible to burst them. The irrigator should not be placed more than one foot above the patient. It is a good plan to try and leave considerable water in the intestine when the irrigation is concluded. About a pint of normal salt solution should be employed. A certain small amount of cereals does not cause, but rather checks, diarrhœa. They are not, it is true, always effective, but milk diluted with oatmeal or barley-water always is tolerated better than if diluted with plain water. As a rule, pasteurization suffices to make milk safe for infant consumption. In very hot weather it is safer to sterilize.—*The Public Health Journal*, March, 1900.

THERAPEUTIC HINTS

℞.

Ol. Morhuæ, ʒiv

Aq. Calcis.

Syr. Calc. Lactophosphat., aa. ʒii

M. Sig. Shake. $\frac{1}{2}$ teaspoonful three times daily for constipation of rhachitic children.—(*J. Lewis Smith.*)

℞.

Syr. Mannæ, ʒvi

Syr. Rhei Aromat., ʒiii

M. Sig. $\frac{1}{2}$ teaspoonful for constipation of youngest infants.—(*Illoway.*)

℞.

Sodii Phosphatis, gr. xxiv

Syr. Mannæ, ʒiiss

Aq. Anisi, ad. ʒiii

M. Sig. One teaspoonful three times daily for constipation of child under one year old.—(*Fruitnight.*)

℞.

Salol.

Bismuth. Salicylat.

Sodii Bicarb., aa. gr. iii

M. Sig. One capsule before breakfast and another before dinner for intestinal antiseptis in cases of mucous diarrhœa.—(*Dujardin-Beaumetz.*)

℞.

Bismuth. Subnit., gr. x

Sodii Bicarb., gr. v

Pepsinæ, gr. ii

Pulv. Ipecac. et Opii, gr. ss

M. Sig. One such powder every hour or two for acid mucous diarrhœa in exclusively milk diet.—(*Carreras.*)

℞.

Pulv. Rhei, ʒi

Magnesii Carb., ʒiii

Pulv. Zingiber., ʒss

Elix. Simplicis, ad. ʒviii

M. Sig. One teaspoonful night and morning as a mild laxative for child of five years.—(*Edwards.*)

℞.

Plumbi Acetatis,	gr. iv
Ac. Carbolici,	gr. ii
Liq. Calcis,	ad. ℥ii
Ac. Acetic.,	q. s. to make a perfectly clear solution.

M. Sig. One teaspoonful every three hours as astringent antiseptic following action of saline purgative in cases of dysentery.—(*Adams.*)

℞.

Ac. Sulph. Aromat.,	gtt. xxx
Tr. Kino,	gtt. xvi
Tr. Opii Camph.,	℥i
Spr. Chloroformi,	gtt. xlvi
Syr. Zingiberis,	ad. ℥iii

M. Sig. One teaspoonful every two hours in cholera infantum of child one year old after colored stool—not green—has been obtained.—(*Hare.*)

℞.

Hydrarg. Chlor. Mit.,	gr. iii
Sodii Phosphat.	
Sodii Bicarb.,	aa. ℥ii

M. Div. in chart. No. xxiv. Sig. One powder every three hours for very acid movements following milk diets.—(*Taylor and Wells.*)

℞.

Acid Benzoic.,	gr. ii
Spir. Aetheris.	
Tr. Aurantii,	aa. ℥ii

M. Sig. Five or ten drops for every hour in cholera infantum.—(*Soltmann.*)

℞.

Ac. Lactic.,	℥ss
Glycerini,	℥v
Aq. Distil.,	ad. ℥iv

M. Sig. Two teaspoonfuls five or six times a day to child one or two years old for diarrhœa with frequent green motion.—(*Otto Seifert.*)

R.

Resorcini,	gr. iii
Syr. Aurantii,	ʒiiss
Infus. Anthemidis,	ad. ʒiii

M. Sig. One teaspoonful every three hours to an infant four to six months old for cholera infantum.—(*Freyberger.*)

BOOK REVIEWS.

"The Autobiography of a Quack, and the Case of George Dedlow," by S. Weir Mitchell, M. D. Published by The Century Company, New York City, 1900.

This little volume which appeared in the main first in the *Atlantic Monthly*, adds to the author's reputation not a little. With evident sympathy he describes the difficulties of the young physician, and with most keen and subtle sarcasm points out the wrong way of overcoming them. The book will be most interesting to the medical men of cities, and its influence cannot fail to be valuable toward sustaining high medical ethics. Few yield as did "Dr. Sanderfoot," but many fall before someone of these temptations. "George Dedlow," without arms or legs, is a curious conceit, which is so well worked out that the reader fails to note the spot where it becomes improbable.

"The Pocket Formulary for the Treatment of Disease in Children," by Ludwig Freyberger, M. D. Second revised and enlarged edition. Published by Rebman, Limited, 129 Shaftesbury Avenue, Cambridge Circus, London, England. 1900. Price 7s., 6 d.

The demand for a new edition of this useful little volume within eighteen months from its first appearance, speaks for its popularity as well as the purpose of the author and publisher to keep abreast of the times. The book has been wholly rewritten to accord with the latest British Pharmacopoeia, and many additions made in it. Our readers will remember that in our previous review we called attention to the excellent arrangement and typography. At a glance on a single page one sees the

remedy, its properties, use, therapeutics, dose, antidote, correction of taste and formulæ for its administration. Hence nearly every page suggests something new to each of us, no matter how experienced. The book is styled a "pocket formulary," and is bound in flexible covers, being about the size of our common visiting lists.

"The Care of the Child in Health," by Nathan Oppenheim, M. D. Published by the Macmillan Company, New York City. 1900.

The author is known as the writer of "The Development of the Child," and "The Medical Diseases of Childhood," to which we have had the pleasure of calling the attention of our readers. The subject of this volume is not less important than the others, and is treated with the same ability. Modern medicine has much to do with the prevention of disease, and surely no greater preventive can be conceived than the proper care of childhood. The various chapters discuss successively pregnancy, the nursery, feeding, bathing, sleep, exercise, clothing, habits, and education. Chapters on the relation of parents to children, defective children, and common diseases conclude a volume of very great interest to parents and physicians. The last chapter covers in about 30 pages much sensible advice, such as we have often to give in answer to questions. Indeed the book is very much what you yourself would write, if you had the time—which you have not, and is, therefore, one you will enjoy owning, and reading, and loaning.

"Practical Gynecology," a handbook of the Diseases of Women, by Heywood Smith, M. D. Second edition, revised and enlarged. Published by Henry J. Glaiser, 57 Wigmore Street, Cavendish Square, W., London, England. 1900.

Twenty-three years ago the first edition of this book appeared. The great advances in gynecology have prompted the author to try again. He has not greatly enlarged as is the manner of most editions, but has carefully revised and still kept the simplicity and brevity of the former edition. There are brief pre-

liminary chapters, and then the diseases are each taken up. Many of them receive only a page or even less, but definition, causes, symptoms, signs, diagnosis, prognosis and treatment are in every case clearly stated. The book does, therefore, serve not merely to help the student, but to refresh the practitioner.

“Progressive Medicine”—Volume II, 1900. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 401 pages, with 81 engravings. Lea Brothers & Co., New York. Issued quarterly. Price, \$10.00 per year.

This last volume covers Abdominal Surgery, Gynecology, Diseases of the Blood, Diathetic and Metabolic Disorders, Diseases of the Glandular and Lymphatic Systems and Ophthalmology. It will, therefore, appeal strongly to our readers. The four men whom Dr. Hare has called to his assistance are all men of wide repute, Dr. William B. Coley, Dr. John G. Clark, Dr. Edward Jackson, and Dr. Alfred Stengel. These are men of large experience as well as skilled writers, and hence peculiarly well fitted to cull for us from the best of the medical literary work of the past few months. Dr. Coley treats of operations on the stomach, of appendicitis, of abdominal tumors, including the assistance which may be gained from the X-ray, and most extensively of hernia. Dr. Clark has gathered much valuable and interesting matter touching upon such topics as “The Treatment of Pelvic Peritonitis,” and the “Ultimate Results of Treatment of Retroversions,” for instance. Some of our readers, too, will be interested in the pathological discoveries in anæmia, leukemia and other blood diseases which Dr. Stengel very skillfully groups. The ophthalmologic citations of Dr. Jackson have been so well chosen that they cover nearly the whole range, though, of course, not completely. We feel sure, therefore, that this volume will add to the already great popularity of the series.

“King’s Manual of Obstetrics.” New (8th) edition. By A. F. A. King, M. D., Professor of Obstetrics and Diseases of

Women in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. In one 12mo. volume of 612 pages, with 264 illustrations. Cloth, \$2.50, *net*. Lea Brothers & Co., Publishers, Philadelphia and New York.

For eighteen years edition after edition of this excellent manual has appeared. Steadily it has been improved and revised. New and approved treatment is accepted and presented. New methods of diagnosis and new ideas as to causes of dystocia or other difficulties are first tested and then cited with appropriate approval or disapproval. Illustrations have been constantly added, forty-one which were not in the seventh edition. A book so well known does not demand an exhaustive analysis, but should and shall have our hearty commendation. The author calls it elementary. If so we fear the very elements of obstetrics are often unknown to the ordinary physician. Surely every-one of us will find much of value in the volume.

“Medicine and the Mind.” Translated from the French of Dr. Maurice de Fleury by Stacy B. Collins, M. D., with fourteen figures and diagrams. Imported by Charles Scribner’s Sons, 153 Fifth Avenue, New York City. 1900. Price, \$4.50.

This is an unique and interesting book. The author has made a careful study of hypnotism. He considers it in its relations to medicine, pointing out its value and its limits. He cites cases of hysterical people whose minds have so influenced their bodies as to produce physical changes. He then shows how similar effects are produced on the minds of some criminals, who are really not responsible for their deeds. Turning to a higher plane, he shows the effects which the unbalanced minds have had on literature. The bearings of psychology upon these difficult problems and its relation with cerebral or brain health and disease form the topic of another chapter. Overwork and its effect on the mind are clearly pointed, and much good advice backed up by many famous examples is given. He then points out how, by means of restraint and suggestion, he has been able to cure indolence, melancholy, love and anger. Not many of us will undertake the treatment of these patients, but still we are all interested in learning how a brother physician has succeeded, and hence will desire to read his own statements. An abundance of authorities and cases are reported to give one confidence in his theories.

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ORIGINAL COMMUNICATIONS

THE PROPHYLACTIC DOUCHE.*

O. S. CHAPMAN, M. D.

Some months ago I learned incidentally that one of our more prominent Minneapolis physicians was using the prophylactic douche habitually and methodically, and I wondered if it were still customary among obstetricians to do so, as I had thought it was now generally discontinued as a routine measure. In the endeavor to ascertain the consensus of opinion from the literature upon the subject I have found much confusion, as opinions have been radically divergent, and the question is still unsettled in the minds of many. It has been held by many bacteriologists that the secretions frequently contain pathogenic organisms which ought always to be washed away to prevent any untoward clinical manifestations. Upon the other hand, it has been maintained by others that the secretions possess bactericidal properties, that they are useful and protective, and to remove them is unwise and harmful. Clinicians have differed quite as widely as the bacteriologists regarding the matter, and various medical societies throughout the civilized world have discussed the question in its two-fold aspects. Where thought is divided the expression of opinion carries with it no **greater** force than appertains to the individual experience of the observer, but one of the chief objects of medical societies is the exchange of views based upon the investigation of the scientists.

*Read before Minnesota State Medical Society, June, 1900.

It is not my purpose to give statistics from the two camps of bacteriologists, or to give a full index of their conclusions, but rather to indicate the general line of observations which have influenced the profession concerning the douche, followed by a proposition for consideration, and a brief presentation of my own prophylactic measures which are not peculiar or unusual and may be deemed unworthy of statement. It is often the detail work, however, which contributes to the highest measure of success for all concerned.

The greatest interest in this subject may be said to have been incited by Gönner, who, in 1887, wrote his article "On the Female Genitalia in Pregnancy and Puerperal Diseases," although preliminary work had been done by others. It had previously been reported from the best bacteriological examinations then at command, that the vaginal secretions contained micro-organisms, that they were not sufficiently bactericidal to render them sterile, auto-infection was considered among the probabilities, and the prophylactic douche was held in much favor by many, especially in hospital practice. Contrary to this expressed opinion, Gönner reported that the vaginal secretions of thirty-two pregnant women did not contain pathogenic organisms usually found in puerperal infection, that auto-infection was not possible, and that the prophylactic douche was not necessary. His observation excited great interest in this field of thought, and numerous examinations were made by many observers, the most of whom vied with each other to testify to the presence of organisms of different varieties, pathogenic, non-pathogenic, and some whose functional possibilities could not be interpreted.

Döderline found various species of micro-organisms in the vaginal secretions of 75 per cent. of his cases, some of which belonged to the type of fatal infection, and he, therefore, concluded in opposition to Gönner, that auto-infection was possible, and the employment of the prophylactic douche was urgently indicated.

Winter stated that the normal uterus was always sterile, but the cervix and vagina contained bacteria whether the women were pregnant or not. He isolated 27 varieties of bacteria

including streptococci and staphylococci. Steffek, Witte, and others gave similar testimony.

Ahlfeld, who was one of the foremost advocates of auto-infection, stated that without doubt many streptococci may be found in the uterus without betraying the least evidence of their presence. Forms of puerperal fever occurred where no examination had been undertaken, and in his opinion, the causing germs must have been present in the uterus or vagina. He admitted, however, the possibility of an ascending invasion.

The presence of the non-interpretable germs seemed to be mysterious in the minds of some, since they could not be said to be of external origin, introduced into the vagina by manipulation, and it was thought to be quite possible that they remained in the uterus or vagina in a quiescent state, waiting for a favorable occasion, like labor, to develop into a more mature organism with pathogenic properties. The large majority of the bacteriologists up into the nineties were in opposition to Gönner, and in favor of the douche, but there were some doubters. Among those who agreed with Gönner were Thomen and Samschin, Menge and others. The former stated that the vaginal secretions of pregnant women, while containing myriads of bacteria in cover-slip preparations, gave uniformly negative results when planted on the usual media.

Menge reported that the vaginal secretions of non-pregnant women were bactericidal, but to a less degree than the pregnant, and showed with experimental inoculation of pathogenic germs, that such germs without the douche met with more timely neutralization in the vagina than when the douche was previously used.

Döderline wrote another article in 1893 in which he thought to reconcile the conflicting views of his contemporaneous investigators by dividing the secretions into what may be termed normal and abnormal, and gave the characteristic appearance and reaction of each. When the secretions were normal there was no possibility of auto-infection, but it might occur if they were abnormal.

In the following year, Krönig, who had succeeded Döderline in the professor's chair, believed that the contention of his pre-

decessor as to normal and abnormal secretions was erroneous, and that the pathogenic organisms obtained by him and others had been introduced into the vagina by their own manipulations. He pointed out that all the investigators up to his time had obtained their secretions by means of a speculum introduced through the vulva, which he thought could not be done without carrying with it a greater or less number of bacteria. It followed, therefore, that the conclusions of all previous investigators were wrong, because they were based upon incorrect technique in bacteriologic research; that the vaginal secretions of pregnant women, acid, alkaline, or neutral, were free from pathogenic germs, that the secretions possessed bactericidal properties, that to remove them was unwise and harmful, and that the obstetric world was in error in using the douche. To prove the correctness of his position, he purposely introduced pathogenic germs into the vagina with no ill effects, for they rapidly became neutralized, thus proving the correctness of Menge's contention.

The importance of Krönig's conclusions, if fully sustained, were far reaching, as they would necessitate the abandonment of the doctrine of auto-infection, and the discontinuance of the prophylactic douche; at least, this was held to be the inevitable deduction.

Döderline wavered from his former position, and doubted the judiciousness of the douche at all times. Williams, accepting Krönig's suggestion that his bacteriological investigations made in 1883 were wrong, proceeded to make a new series of investigation, which were reported in the *American Journal of Obstetrics* in 1898. In the last of these series he agreed with Günner, Krönig and others, that auto-infection was practically impossible, that the prophylactic douche was unnecessary and probably harmful.

Owing to the convincing testimony of these observers, many obstetricians learned to discard the douche; first the prophylactic, then the douche altogether, reserving its use for operative and other necessary cases only. It must not be supposed, however, that Ahlfeld, Winter, Suffeck, and others gave up their contention. They could not be convinced that their previous

clinical experience was all wrong and injurious, although they were left in doubt. In their opinion it could not yet be allowed that the laboratory demonstrations of the innocuousness of the vaginal secretions should justify them in acting as though that innocuousness were a certainty until it was backed up by abundant clinical experience.

Thus we find that there are two classes of observers whose results are absolutely contradictory, but the weight of testimony since the report of Krönig in 1894 seems to be in favor of discarding the douche, and this is the prevailing sentiment in the current literature of today. Doubtless the vaginal secretions may contain a great variety of bacteria, but they are non-pathogenic, or produce only a moderate rise of temperature. The secretions are more or less bactericidal in character; they provide nature's barrier against the entrance of deleterious germs into the circulation, and to remove them is held to be unwise. Severe puerperal fever and death is generally held to be due to infection from without, and it is usually because of neglect of aseptic precautions on the part of the attendant.

It has been the generally received opinion that the presence of bacteria, pathogenic or otherwise, in the blood, the lymph and tissues generally is the exception and not the rule; that in health the leucocytes and the endothelial cells maintain the tissue germs free. We are forced to admit, however, that sometimes bacteria enter the organisms without there being any recognized external cause. We speak of disease developing under these conditions as cryptogenic. This brings me to a point to which I wish to call your especial attention. We have seen that the vaginal secretions may contain a great number and variety of germs. For instance, Williams found streptococci in 8 cases; staphylococci in 3 cases; colon-bacilli in 6 cases; anærobic bacteria in 3 cases; bacteria in cover-slip but cultures sterile, in 4 cases; diphtheria bacilli in 1 case; typhoid bacilli in 1 case; cover-slip cultures and blood sterile, 11 cases; cover-slip sterile, with malarial plasmodia in blood, 1 case.

If it does happen that bacteria enter the vaginal secretions under ordinary conditions, if they are not carried up by manipulation, and there is not an ascending invasion, all will agree

that there is some mode of entrance, which is likely to be found, not so much in connection with the denser epithelial surface layers of the body, as in connection with the more delicate mucosa of the respiratory and alimentary tracts. If we accept the postulate presented by Prof. Adami in his lecture given before the Hennepin County Medical Society recently, there must be some modification of the view heretofore held, that the tissues of the body are normally free from all varieties of bacteria. He states that in connection with the alimentary tract, we have very definite evidence that bacteria may penetrate the protective barrier of the epithelial cells, nay more, that they are constantly taken into the system. There can be no doubt, he says, that under certain conditions, leucocytes are constantly passing out on the free surface of the digestive tract, and passing back, and such leucocytes, taking up the various food stuffs, are able also to take up bacteria. He claims that the researches of Ruffer fully prove this, who found by experiment that the leucocytes were present on the free surface of the bowel, others between the epithelial cells of the mucosa, some of which contain microbes, while in Peyer's patches, the interior of the individual lymph follicles contain enormous numbers of micro-organisms which are without exception in the interior of the lymphoid cells of the tissues. Professor Adami then goes on to state that "under certain conditions bacteria pass into the lymphoid glandular tissues of the pharynx, as of the small intestines, and there tend to be destroyed, and these lymph glands of the sub-epithelial and submucosa areas of the alimentary and respiratory system may be regarded as a secondary line of defense of the organism against bacterial invasion. But these facts show that at least one tissue is not normally sterile; it is, if you like so to regard it, potentially sterile; the tendency is for entering bacteria to be rapidly destroyed. But we can realize conditions under which such destruction is not complete—when, for example, the passage out, and the migration and subsequent return of the leucocytes is excessive, or when again the cells of the body are weakened and can not with sufficient rapidity destroy the bacteria, or when again bacteria themselves, happening to be in the intestines, are of peculiar virulence."

It has occurred to me that along this line of reasoning the presence of bacteria in the vaginal secretions may be explained and the mooted question of auto-infection may be interpreted. We all know that during pregnancy, and especially during the puerperal state, the circulation through the uterus and adjacent tissues is greatly increased, and the food supply is greatly augmented; consequently the activity of the leucocytes must be much increased, and according to the hypothesis of Adami, we can readily imagine that the bacteria from the free surface of the bowel, and elsewhere, may be taken up by the leucocytes during their functional activity, and deposited in the various tissues contiguous to the uterus, there tend to be destroyed, and the organism will then remain "potentially sterile." But not infrequently the bowels become torpid, the circulation sluggish, and it is not improbable that under such conditions the bacteria so deposited become excessive, and can not with sufficient rapidity be destroyed, since the cells of the body are lacking in energy, and perchance the bacteria themselves may have a peculiar virulence. Apparently, nature has provided a channel of elimination for just this condition, as we find the vaginal secretions are wonderfully increased, and become a perfect sluice-way of morbid products. Hence, according to the testimony of most observers, a host of bacteria of all varieties may sometimes be found therein.

The cycle of life and activity would thus be complete when the bacteria are carried through the protective barrier of the epithelial cells and deposited in the body, thence carried down and out through the vaginal secretions. In case the bacteria are not thus all eliminated, a symptomatic fever is developed from auto-infection, more or less intense according to the kind and virulence of the bacteria. Indeed we may have a fatal puerperal infection, cryptogenic in character, the cause being unknown and unaccounted for, which has been the experience of many obstetricians.

Upon the theory above given, we can readily explain the beneficial effects of free catharsis, which I dare say is the very common experience, as it aids the process of elimination. The idea does not preclude the danger of an ascending invasion, of infec-

tion from our own manipulation, or disparage the importance of the utmost aseptic precautions. It does, however, animadvert from the importance of the prophylactic douche, provided the channel of elimination is kept open.

I have purposely avoided the discussion of the very important and interesting question as to the gonococci sometimes found in the vaginal secretions, as it does not directly concern us here, and the discussion would very considerably enlarge our scope.

As to my own prophylactic measure, permit me to say that the first method of procedure is to direct the cleansing of the lower bowels by enema, not merely to avoid the discharge of fecal matter during the later stages of the labor, but to eliminate the bacteria that may have accumulated therein. After thoroughly cleansing and disinfecting the genitals and surrounding parts, it has been my habit to use the preliminary douche, but after reviewing the literature upon the subject, I question the advisability of so doing unless there is some suspicion that there may be gonococci in the vaginal secretions. I am almost persuaded, in accordance with the testimony of Menge, and others, that bacteria will meet with more timely neutralization without the preliminary douche than with it.

It goes without saying that the hands and finger nails should be thoroughly cleansed, not made surgically clean as if they were to come in contact with the peritoneum or other unprotected surfaces, but for all practical purposes they can be made so without an undue amount of care. Beside the bowl containing the water for cleansing the hands, I have a smaller bowl of sterilized water furnished, into which one or two tablets of bichloride of mercury is dropped, and the hands are dipped into the solution before making each examination. After ascertaining the progress of labor I am not satisfied to wipe the fingers with a clean napkin, merely, but wash them after each examination, and dip them in the bichloride solution.

When the head of the child begins to emerge, I then, and several times subsequently, saturate a piece of absorbent cotton in a solution of bichloride, and let the solution fall over the presenting parts without disturbing the secretion, upon the assumption that where carrion accumulates, there the buzzards flock in great numbers.

After the completion of labor, in ordinary cases, douche is used until the third day, unless there is some indication for the same on account of offensive discharges. I encourage the patient to lie upon one side or the other well inclined forward much of the time, in order to facilitate the elimination of the vaginal secretions, and also to prevent the very general inclination of the uterus to become retroverted or retroflexed.

Clinically the results are everything that could be desired, for during the last five years or more of a moderate obstetrical practice, I cannot recall a case of normal labor where the temperature has exceeded 101° , and it has not remained above 100° excepting for a brief period during the action of a cathartic.

Minneapolis, Minn.

PELVIC SUPPURATION.*

FLORUS F. LAWRENCE, M. D., D. SC.

Chief of Staff and Surgeon to the Lawrence Hospital for Women; Ex-President Central Ohio Medical Society; Ex-Secretary Section on Obstetrics and Diseases of Women.

The study of pelvic suppuration is one which, because of the suffering, invalidism and fatality resulting from it, becomes constantly more important, and more fruitful of good results. If Lawson Tait had never done aught else than establish on a firm foundation the treatment of these cases, his life had been one of the most useful, and most fruitful for good to humanity, of the century. Men may differ as to method. They may belittle this or that man's efforts, but the fundamental truth evolved from this work in search of truth, will stand. Asepsis, antisepsis, technique, all must yield to those higher and more perfect truths which have for their support foundation in anatomy, and which are constructed upon philosophic lines, in the light of practical pathology. If we are to keep grim death at bay, or subserve human comfort, prejudice and commercial interests (the progenitors of fads) must be laid aside. There

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can be no one mind which secures *all* there is of truth, while the rest must feed upon husks—hence the frequent and thorough discussion of these subjects becomes at once our privilege, our pleasure and our profit.

The study of pelvic suppuration involves:

First—Cause.

- (a) Gonorrhea.
- (b) Abortion.
- (c) Unclean midwifery.
- (d) Improper local treatment.
- (e) Extra uterine pregnancy.
- (f) Hæmatocoele of broad ligament.
- (g) Tuberculosis.

Second—Location.

- (a) In retro-uterine cellular tissue.
- (b) In walls of uterus.
- (c) In Fallopian tubes.
- (d) In ovaries.
- (e) Fallopian tubes and ovaries.
- (f) Between folds of broad ligament.
- (g) In Fallopian tubes, ovaries and uterus.

Third—Character.

- (a) Acute.
- (b) Chronic.

Fourth—Diagnosis.

- (a) Pain. (not constant.)
- (b) Soreness.
- (c) Tumefaction.
- (d) Temperature (not of great value.)
- (e) Pulse (not of great value).
- (f) Vesical tenesmus.
- (g) Rectal tenesmus.
- (h) Previous history.

Fifth—Treatment.

1st.—Expectant: (a) Relief of pain; (b) Rest;
(c) Hot douche.

2nd.—Temporary: (a) Vaginal incision; (b) And drainage.

3rd.—Curative: (a) Abdominal section; (b) Vaginal hysterectomy.

Whatever of merit or whatever of error there may be in what I have to say upon this subject is formulated from an experience and careful analysis of 268 cases of pelvic suppuration, in which the causes were as follows: In 117, gonorrhea could be definitely ascribed. In 94, abortion, miscarriage, or some accident during puerperal conditions. In 6, extrauterine pregnancy. In 8, very strong evidence was found that careless, or injudicious treatment had been the cause. In 11, everything pointed to tubercular infection. In 1 case an hæmatocele of broad ligament occurred during labor. In the remaining cases nothing definite could be learned as to cause, and they must be classified as cause unknown. The points of particular interest in this are: 1st, relative number of cases in which abortion or other obstetric condition is the cause of pelvic suppuration; 2nd, the fact that tubercular infection is probably a much more frequent cause of pelvic suppuration, than is usually thought to be the case.

I have omitted from this classification cases of suppurating ovarian cysts and also cases of suppurating dermoid tumors of ovary; as these cases are not in any sense suppuration of any normal pelvic structures and the object of this paper is to present the causes and anatomic locations of the pus, as a basis for the selection of method of operating for relief.

In this series of 268 cases the suppuration was confined to the Fallopian tubes in 138 cases. In Fallopian tubes and ovaries in 31 cases. In Fallopian tubes, ovaries and subperitoneal cellular tissue, 58 cases. In Fallopian tubes, ovaries, and uterine walls, 12 cases. Retro-uterine cellular tissue, 16 cases. Between the folds of broad ligament and involving Fallopian tubes and ovaries, 8 cases. Between folds of broad ligament alone, 5 cases.

The cases of acute character will usually be found as a result of abortion or of puerperal infection. They occasionally result from gonorrhea, but not so frequently. The two predominating features are extensive peritonitis and rapid general infection. Owing to the extreme virulence of the pus,

these cases of suppuration in puerperal state, occur frequently as a result of officious use of douche, or some other form of tinkering at a time when Fallopian tubes are patent, uterus infected and mucosa of tube a fertile field for infection with and rapid development of the suppurative process. If you please, an effort to use the so called *anti-septic methods* for the relief of a condition which *aseptic* work would have prevented.

The chronic cases are those which have recovered from the acute infection, as a result of strong inflammatory adhesions localizing the process, those due to gonorrhea, to traumatism and to tuberculosis.

In these cases the inflammatory exudate is sufficient to completely fix and localize the process. The symptoms are those which result from compression of sympathetic, of ureters, of bladder, rectum and pelvic structures in general. There is as a rule no evidence of general infection.

The diagnosis of pelvic suppuration is one of the most neglected of gynæcologic fields. It is of greater import than many of our most *vaunted new* (?) operations. The proper recognition of the pelvic condition would lead to more prompt recourse to proper surgery and consequent increased benefit to the sufferer. It is a very common thing to find a poor woman whose tubes are full of pus, and who has been tortured by the would-be gynæcologist with his tampon and office treatment, or some one of the more venturesome kind who thinks that he can "curette as well as anybody." Only a few days since I operated upon a young woman whose tubes and ovaries were reeking with pus, upon whom one of those "know it alls" wanted to perform curettage.

The general symptoms of pelvic suppuration follow as a rule an attack of pelvic peritonitis, or as we frequently find, "inflammation of the bowels," or sometimes I have found that there was a history of one or more attacks of appendicitis, although to find the vermiform appendix involved is a rare occurrence. In pelvic diagnosis the history of the case, if properly taken, is of the greatest possible advantage. To know that a patient has suffered from a fixed date, with suffering growing worse, is a help, not only in finding the cause of the infection, but very

often determines the character, location, and virulence of the infection. Next to the *developed* touch, and a broad knowledge of anatomy, the well taken history should rank, but I am sorry it is a rare occurrence to find a complete, or connected history.

For this reason I risk being considered prosy, and give an outline covering essential points in a given case.

CASE HISTORY.

Name—M. J.

Age—27.

Married or not—Yes.

Age at first menstruation—13.

Health immediately preceding—Good.

Whether first menstruation was accompanied by any pain or other abnormal symptoms—No.

Did menstruation become regular?—Yes.

Number of days' flow—Four.

Amount of flow—Average four napkins in twenty-four hours.

Presence of clots or shreds—None.

Occurrence of any febrile or exanthematic diseases including rheumatism and parotiditis—Scarlatina at sixteen.

If married, at what age?—Married at 21.

How many pregnancies?—Three.

How many abortions or miscarriages?—One.

Character of labor at term—Normal two labors.

Any complications, if so as complete history as possible—None.

Length of time following last labor or abortion when pelvic symptoms noted—Immediately following last, which was abortion 2 years ago.

Character of pelvic symptoms—Pain, bloating, soreness, dysmenorrhea, vesical tenesmus, rectal tenesmus.

History of treatment—She has had none.

Present appearance—Emaciated, anæmic.

Pulse—84.

Temperature—100° F.

Respiration—18.

Tongue—Yellowish coated.

Character and quantity of urine—40 ounces 24 hours.

Frequency and character of stool—Constipated.

Presence or absence of pain, and location of—Pain both iliac fossæ.

Presence or absence of soreness and location of—Present both iliac fossæ.

Physical examination:

1. Inspection of abdomen—Negative.
2. Palpation of abdomen—Tenderness, induration both ovarian region.
3. Percussion—Dullness, same.
4. Inspection of vulva—Irritated, leucorrhea purulent.
5. Digital examination—Hard, fixed mass both sides uterus.
6. Bimanual examinations—Above.
7. Inspection of the cervix and vagina—Erosion of cervix.

Above case was number 468 on my record book. She was operated upon; two large pus tubes removed. This was undoubtedly a case of infection due to improper care at the time of abortion, and is a very common case history.

No surgical dictum can be considered sound or safe, which has not a solid anatomic foundation, constructed on philosophic principles.

We hear much about drainage, and "freedom from shock," etc., when operating per vaginam. But we must keep in mind that empiricism is not always truth, and further, that *truth* may be so hampered, or beclouded by empirical sophistry, as to render it unrecognizable by those earnestly searching for it. There can be no possible question as to the preference to be given the vaginal route in certain cases, and there can be no denial of the advantages of the abdominal route in other cases. In certain cases immediate relief is paramount to *cure* and in these the rule must be the shortest, quickest, and simplest method to evacuate the pus and thus check progress of infection. In other words, in certain cases of pelvic suppuration, our sole duty is to save our patient from death by infection. The consideration of cure of the pelvic disease being for the time a secondary matter, and one to be considered only when she is re-

covered from the septic condition. There should be no warfare among gynæcologists on this subject. There should be no effort to make the patient "fit" some preconceived or pet notion as to treatment. The French idea of making the vagina the workshop of gynæcologists, may be broad enough for some conditions, but it is not broad enough for American gynæcology to stand upon.

Like every good thing, it has its limitations.

The treatment then resolves itself into palliative or expectant, viz.—rest, opiates, hot douche (if properly used). In cases of pelvic peritonitis where we are in doubt about suppuration, rest and sedatives are proper, useful and safe. The hot douche, however, may be the means of as much harm as good, and unless a competent nurse be in charge, this had better be omitted.

The temporary treatment, which also may in certain rare cases prove curative, consists in vaginal incision and drainage. The anatomic location of pus, as well as the course of the suppuration, bear a distinct and valuable relation to the method of operating for relief.

In those cases where suppuration is limited to the retro-uterine tissue, to the subperitoneal tissue, or between folds of broad ligament, the evacuation per vaginam can be quickly, safely, and thoroughly accomplished. In these cases the existence of intestinal adhesions is not one of great probability, the abscess is usually circumscribed, its evacuation and drainage will usually not only check infection and save our patient, but if properly performed and cared for afterward, a cure will result in many cases. The incision must be free and I prefer the following: First. A vertical incision in the middle line of vagina beginning close to posterior cervico-vaginal junction, and extending downward one inch, or one and a half inches, then a lateral incision curved slightly forward at the cervico-vaginal junction. The mucous membrane only is cut, the remainder of the operation should be performed with the finger or a blunt instrument.

When this incision is used there is free access to the abscess without great danger of injury to ureters, and subsequently thorough drainage.

In puerperal cases, unless the pus be high up, this should be the practice, because the pus is *so virulent* that ever so small a quantity of it in peritoneal cavity causes a fatal peritonitis in spite of all that can be done. The separation of adhesions should not be attempted; simply incise freely and drain. The separation of adhesions and removal of tubes and ovaries can be done later after patient has recovered from her sepsis.

The vaginal route is particularly well adapted to and should be used only for those cases in which the pus is confined to retro-uterine cellular tissue, between folds of broad ligament, and those in which walls of uterus are involved.

Vaginal hysterectomy may be of value in those old chronic cases in which the walls of uterus are the site of abscesses, although even in these cases I am very much in favor of the abdominal route and for the following reasons: In a very large percentage of the cases of long standing, we find a history of acute attacks at intervals; these attacks are attacks of peritonitis, and results in extensive and frequently very strong adhesions to intestines, omentum and other important structures. These can be safely dealt with from above, but fecal fistulæ, ureteral fistulæ and funerals are common when vaginal route is followed. Another reason is, that in operating from above, the cervix can be retained and thus preserve a strong pelvic roof to support contents of abdomen. There is one important point not frequently referred to in this connection, viz: the lower down in the pelvic cellular tissue you get the ligatures, the more certainty you have of ligature abscess, and the higher up you place them, the less likely will an abscess result.

The results we should aim to achieve in pelvic suppuration, after we eliminate the puerperal cases, are not only the relief, but the cure of the patient. The suffering is more largely due to the adhesions, and the inflammatory exudate, than the pus, hence to cure, we must not only remove pus tubes, etc., but we must break up all adhesions, and leave the parts in as nearly normal position as possible. This is certainly much more completely and safely accomplished through an abdominal incision. I have during the past year been compelled to open the abdomen quite a number of times in cases where vaginal

operations had been performed, and in several of these the former operation had been performed by men whose skill can not be questioned. In one case, a vaginal hysterectomy had been performed by one of Ohio's ablest men; two months later she had an obstruction of bowels, although I am informed she recovered from the hysterectomy absolutely without temperature or any other evidence of inflammatory action which should result in adhesions. When I opened the abdomen I found the intestines matted together high up in the left iliac fossa. There were no adhesions low down in the pelvis, hence it is reasonably safe to conclude that at least some of these adhesions were present at the time of the first operation, and if the surgeon had operated through an abdominal incision he would have found and relieved the condition and thus saved the patient the necessity of a second operation. Incomplete operations are more apt to result disastrously than to be of benefit. The diagnosis of the case should not rest upon the "exploratory incision." Knowing what we may have to deal with, gives courage in the doing almost as much as knowing how to do.

The abdominal route then is preferable in all cases of pelvic suppuration, except those noted as being especially suitable for vaginal operation.

423 E. Town Street, Columbus, O.

THE OPERATIVE TREATMENT OF COMPLETE PROLAPSE OF THE UTERUS IN ELDERLY WOMEN.*

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The author comes to the following conclusions:

1st: That a woman suffering from procidentia or prolapse of the uterus out of the body, though not in much pain is yet very miserable.

2nd: She is in some danger owing to the cervix becoming ulcerated and the ulceration frequently becoming cancerous.

*Original abstract of paper read before the Canada Medical Association.

3d: It is a mistake to think that she is too old to undergo an operation because she is forty-five or fifty or even seventy-five years of age.

4th: Elderly women support these operations remarkably well; they only require from twenty to thirty minutes for their performance; and even if we knew that the patients were only going to live one year afterwards it would be well worth while operating for the sake of the comfort it affords them.

5th: The operation of vaginal hysterectomy is especially easy and safe in these cases, having not more than one per cent. of mortality and probably not even that.

6th: Ventrofixation gives good results when the uterus is short, but fails when it is long. In some cases the vagina and bladder pull down and elongate the cervix after the fundus has been firmly attached to the abdominal wall.

7th: In either case whether hysterectomy or ventrofixation be employed it should always be followed by an anterior and posterior colporrhaphy.

8th: These patients should remain in bed for six weeks after their operation, in order to give time for the new tissue to become strong.

SELCTED ARTICLE.

OBSTETRICAL "DON'T FAILS."

CHARLES I. PAGE, M. D.

Don't fail, when engaged to attend confinement, to ascertain the character and number of previous labors, abortions, etc. Don't fail to remark that you cannot predict with certainty when delivery will take place. Don't fail to impress upon the patient the difficulty of preventing and curing the vomiting of pregnancy. Don't fail to examine the patient's heart. Don't fail to examine the urine at regular intervals. Don't fail to examine the generative organs. Don't fail to refuse to "help your patients out of trouble." Don't fail to respond at once when a pregnant woman sends word that she is flowing. Don't

fail to determine the presentation by the seventh month. Don't fail to give instructions in the hygiene of pregnancy. Don't fail to inspect the lying-in room and the articles needed during parturition. Don't fail to carry out asepticism; you may save yourself a guilty conscience and perhaps a patient. Don't fail to learn the condition of the bowels; it sometimes saves time and disagreeable features during the second stage. Don't fail to forbid the patient to use the water-closet during labor; puerperal fever is occasionally caused in this way. Don't fail to carry a perfectly equipped obstetrical bag. Don't fail to have boiling water at hand. Don't fail to see that the patient has a new fountain syringe; the family heirloom is dangerous. Don't fail to *forget* to use the syringe after a normal labor; it is not indicated. Don't fail to have the examining hand aseptic; septic germs are busy beings. Don't fail to avoid *too* frequent examinations. Don't fail to make use of bisulphate of quinine in uterine inertia. Don't fail to remember the indications for using the catheter. Don't fail to remember that there is usually a decided interval between the ending of the second and the beginning of the third stage of labor. Don't fail to employ Credé's method with a retained placenta. Don't fail to examine the placenta. Don't fail to examine the perinæum. Don't fail to remain with the patient one hour after delivery. Don't fail to administer ergot. Don't fail to leave written instructions with the nurse. Don't fail to examine mother and child before leaving. Don't fail to return within six hours.—*The New York Medical Journal*, Vol. LXXII., No. 6.

Litchfield, Conn.

GYNECOLOGY AS A SPECIALTY.*

J. B. McGAUGHEY, M. D.

There is a growing belief among the surgeons of the present day that gynecology as a specialty exists only by sufferance and that modern general surgery should embrace substantially the entire field now claimed by the gynecologists. This statement is supported, not only by the assertions of the surgeons themselves, but by the fact that all recent systems of surgery devote a large space to this subject. Such works all contain more or less complete treatises upon gynecology.

It is impossible to define with mathematical accuracy the lesions that should be allotted to the gynecologist. There are, however, a number of affections which so clearly belong to his province, that, while this division of work continues, he may claim them without fear of his rights being successfully assailed.

This department of medicine and surgery has brought about results in affording relief from suffering and in prolonging life which have rarely been equalled and never surpassed by any other branch. That these results have been achieved largely through the aid of surgery detracts nothing from their worth or from the honor of those through whose exertions they have been secured. It is true, McDowell, Atlee, Sims, Kieth, Wells, Lawson Tait, Battey and many others could not have accomplished their work had they not been surgeons, but their work was not confined within the limits of the general surgery of their time.

Though the surgeon may be a gynecologist and vice versa there seem to be valid reasons for maintaining gynecology as a specialty or distinct branch of practice, as it affords ample room and material for those who may be disposed to devote their services and their investigations to it. Though many problems have been satisfactorily solved and others are well advanced in

*Address of the Chairman of the Section on Gynecology, at the 32nd Annual Meeting of the Minnesota State Medical Society, Duluth, June 29, 1900.

the process of solution, it must be admitted that the teaching and practice of even the acknowledged masters in this specialty are really or apparently at variance, to a degree that forces the conviction that much careful observation and vast experience will be required in order to establish fully the positive and relative values of methods advocated by some and condemned by others. It is believed that real progress on these lines will be promoted by sustaining the specialty as it now exists. This should be done in a broad liberal spirit. Those engaged in this field should guard against being fenced in and oppose all attempts at the erection of barriers to prevent the entrance of others whether surgeons, general practitioners or other specialists. Contributions which possess merit should be welcomed regardless of the source from which they emanate.

The indications for and the method of performing many operations required in the successful treatment of some diseases of women, have been so clearly established, that, with slight modifications in detail in operating they have been practically accepted by all engaged in this work e. g., it would seem that little can be added to the present mode of dealing with ovarian cysts. On the other hand, the papers presented to and the discussions which take place in, the meetings of the various gynecological societies of the world furnish abundant evidence of a wide diversity of opinions concerning the treatment of other, not less important, affections. Innumerable operations are advocated for a particular lesion, and slight and seemingly unimportant modifications are dignified by a name, usually that of the originator or, too often, innovator, who suggests an original procedure. Who would attempt to enumerate, much less describe, all the so-called operations that have been recommended for the relief of the torn perineum? Yet when examined critically all are based upon either the method of Emmett or that of Lawson Tait. Objections may be urged to either or both and some of the changes suggested are doubtless valuable in suitable cases, but on the whole, the main principles are embraced in the procedures named. Both operations when properly performed have been followed by satisfactory results, much depending upon the familiarity of the operator with the mode selected, and the com-

mon custom of decrying one and extolling the other should be condemned.

The causes of uterine displacements and the conditions arising therefrom are numerous. Consequently the treatment best adapted to a particular case may differ radically from that required by another, but the multiplicity of causes is equalled, if not surpassed, by that of the methods recommended for relief. Alexander's operation has many supporters and in proper cases is attended with success. The advantages of shortening the round ligaments by reaching them through the vagina or by coeliotomy, though each has advocates, are not clearly apparent. This operation is only indicated when the displaced organ is reasonably free from adhesions and when its weight is not sufficient to bring about recurrence of the malposition. Ventral fixation almost certainly effects a permanent cure, is attended with little danger and is easily performed, but is only adapted to women who have passed the child-bearing period of life. Ventral suspension is almost equally efficient and seems to be free from the objections that belong to the last mentioned procedure. It seems to be the operation of choice in child-bearing women when the Alexander method is not applicable. Various methods of vaginal fixation have been practiced, concerning which opinions are very conflicting. The advantages of modern methods for the relief of these annoying and painful affections over the application of a pessary are as pronounced as those of curing a hernia by the Bassini operation over retaining the rupture by a truss.

Much time and more experience will be required to determine with scientific accuracy, which route should be adopted in dealing with some affections of the uterus and its appendages demanding operative measures. The supposed advantages of the suprapubic method over the vaginal and of the latter over the former have been subjects which elicited much discussion. Here individual practice, experience and preference are factors in governing the decision. Much more light has been thrown upon this question in the last few years and real progress has been made in its solution.

The slow growing fibroid tumor of the uterus which produces

little discomfort has received considerable attention. No fixed rules have been adopted for dealing with this growth but expectancy seems to have considerable support.

Postural drainage after operations in the abdominal cavity, especially in septic cases, has recently attracted attention. Clark's method has had many advocates. That recommended by Fowler, though the opposite in many respects, of the former, may be useful in a certain class of cases. Time and further experience will furnish the knowledge required to give each its proper place in practice.

Malignant diseases of the uterus and the best methods of treating the same continues to be a subject of absorbing interest to the gynecologist. The overwhelming importance of the early recognition of the disease is universally admitted. No operation short of radical extirpation furnishes the least hope of cure and this cannot be accomplished in the advanced stages of the affection. The admirable paper of Dr. Howard A. Kelly read before the New York County Medical Society is especially valuable for the reason that it emphasizes this point. If cancer of the uterus can be treated with the same success as that which now attends the modern treatment of carcinoma of the mammary gland, hope, to a degree hitherto unknown, will be extended to the unfortunate sufferers from this disease. The operation recommended by Dr. Kelly seems to be open to the objection, that, even in the most skilled hands, opportunity would be afforded for the extension of the disease by implantation, but the experience of this eminent operator and accurate observer fails to show any results of this character.

Preventive gynecology has not received attention commensurate with its importance. Many of the conditions which produce suffering, render operative interference necessary and place life in peril, should and could be avoided. Time will not permit me to call attention to all of the agents that bring about lesions of this nature. Accordingly I have selected two for brief consideration and these two are believed to be pre-eminently the worst in the category. I refer to the abortionist and the gonococcus and name them in the order of their vileness, degeneration and ability to produce physical, mental and moral

disease. Both perform their work unseen by man, the less disreputable one can be detected by the aid of the microscope but unfortunately the other, except in very rare instances, eludes detection regardless of the means employed for that purpose.

It is useless to claim that abortionists are not found in abundance in the ranks of the medical profession. It is true they are rarely met with in our medical societies, but they are graduates of our medical colleges, pass our State examinations, or take advantage of the exemption clause in our law, are licensed to practice and have the same legal standing that is accorded to physicians who walk with body erect. They are often found occupying prominent position in society, in political life and even in the Christian Church. Many of them are noisy anti-vivisectionists and active members of societies for the prevention of cruelty to animals. Their practice is largely acquired and held by virtue of their willingness to guard the family against the entrance of unwelcome, though rightful, visitors, whose presence it is supposed would cause inconvenience and undesirable expansion. They play the role of executioner at a stated sum per capita, usually much less than that demanded by other assassins; doubtless for the reason that their trade can be carried on without subjecting those engaged therein to any danger of person or life. Their services, when they fail to provide employment for the undertaker, yield abundant work for the gynecologist, in the form of traumatisms and sequels of infection. Any individual whose depravity has attained a depth which will allow him to pursue this practice can never develop the conscience that is required in order to do aseptic work, hence infections more or less severe follow his operations in a large percentage of cases.

The part played by the gonococcus in the production of diseases of women has been a subject of much study and investigation during the last two decades. It can scarcely be claimed that, even at the present time, all the ravages brought about by this germ are recognized and appreciated. It is safe to assert that an appalling number of women are rendered invalids and thoroughly unsexed by this infection and that the great majority of those thus affected become so through no fault of their own

save that of being a party to an unwise marriage. The gynecologist has accomplished much in affording amelioration to this class of cases, but he, of all men, is too well aware that despite his highest skill and best efforts the results obtained fall far short of complete restoration to health and vigor. The existence of gonorrhea in women is not detected as a rule, sufficiently early to give the sufferer the advantages of early treatment and when relief is sought it is found, too frequently, that the infection has extended much beyond the seat of invasion.

A knowledge of the importance of these factors in producing diseases of women, however complete, fails to suggest positive means for their suppression. Statutes enacted to arrest the work of the abortionist designating punishment for his crimes have proven to be of little or no value as it is impossible to secure sufficient available evidence to ensure conviction.

No method of inspection has been devised that will effectually prevent the dissemination of gonorrhea. It is believed that if those prone to become sufferers through either agency could be fully informed of the attendant dangers, real progress would be made in abolishing both the abortionist and the gonococcus. The duties of the medical profession and more especially of the gynecologist concerning these matters are clearly apparent. Pains should be taken to point out the risks incurred and the inevitable injuries arising from these causes. No exaggeration is necessary, a plain statement of facts should be convincing.—*St. Paul Medical Journal, Vol. II., No. 8.*

REVIEW OF GYNECOLOGY AND SURGERY.

PUERPERAL ECLAMPSIA.

Dr. R. R. Kime reports briefly the following three cases of puerperal eclampsia.

CASE I.—Called in consultation to see Mrs. S., aged 30. Multipara, full term, having convulsions, in second stage of labor; gave ten drops veratrum, Norwood's tincture, hypodermically; delivered with forceps; child dead and decomposing; carried hand up into uterus to remove bits of decomposed membranes, etc.; irrigated, disinfected uterine cavity, applied antiseptic vulval dressing with binder. After my arrival patient had two convulsions before and two after delivery, one occurring as I entered room.

Veratrum was repeated and patient kept under its influence for some days.

Urine coagulated almost solid, contained pus, large hyaline and some granular casts, deficient in urea, very pale, low specific gravity. Patient had all the characteristic symptoms of profound toxemia. After months of treatment the eye symptoms of the kidney lesion cleared up. She became pregnant eighteen months afterward, was carried through full-term labor and delivered of dead child without special complication or return of kidney lesion. At no time did albumen appear, no casts, no toxemia discoverable.

CASE II.—In consultation. Mrs. R., aged 28 years. Multipara, eight months pregnant, in convulsions, semi-conscious; convulsions controlled with veratrum; cathartics and diuretics given.

Patient delivered next morning; urine coagulated almost solid with heat and acid; specific gravity 1008; large hyaline casts, pus, blood, kidney epithelium, symptoms of profound toxemia; almost complete loss of vision; eyes examined by specialist, confirming albuminuric retinitis. Under ordinary treatment for some weeks failed to improve, then placed on pyrozone, diuretic and bitter tonic; the urine soon cleared up, pus, albumen and casts disappearing. Vision gradually returned to near former

standard. This patient also became pregnant about one year afterward, and was delivered at full term without special complication.

CASE III.—Mrs. P., aged 28 years. Primipara; saw her first three months after delivery, giving history of kidney trouble with profound toxemia at labor and afterward; now weak, anemic, pulse 120 to 130; heart murmur of anemia, dyspnoea marked, propped up in bed to get any relief; temperature subnormal; edema of extremities; abdomen distended, approximately two gallons of fluid in peritoneal cavity; urine pale, specific gravity 1005, deficient in quantity, and urea, albumen, pus, and a few granular casts present.

Under treatment urine cleared up, fluid in peritoneal cavity absorbed and eliminated, heart murmur ultimately disappearing. After fluid was absorbed local treatment corrected a sub-involuted, retroverted, slightly adherent uterus.

Patient became stout and hearty. Sixteen months afterwards became pregnant; in about six weeks took typhoid fever; while convalescing, nausea and vomiting of pregnancy set in and proved very, very obstinate. At no time was there any evidence of kidney lesion or heart complication except a general weakness. The president of this society saw the patient, and advised emptying uterus. After waiting a few days longer with a hope of getting relief otherwise, I rapidly dilated cervix, emptied, disinfected and tamponed uterus in twenty minutes, with very little loss of blood. Work done without anesthetic.

Patient gradually improved and made uneventful recovery.
—*The Atlantic Journal-Record of Medicine*, Vol. II., No. 4.

UNNA'S PAINT FOR CHRONIC ULCERS.

Dr. R. S. Michel cordially commends this method of treatment.

“The dressing is prepared thus: Take of water, and glycerine, each ten parts, and of gelatine, and white oxide of zinc, finely powdered, each four parts. The gelatine should be of the best quality. Dissolve the gelatine in the water by means of a water-bath. While hot add the glycerine, and finally the ox-

ide of zinc, stirring vigorously and continuously until cold. It is somewhat difficult at first to prepare it well, but with a little experience the art of doing so is readily acquired.

Prepare the leg by washing it thoroughly with soap and water. Carefully dry it, and rub it with alcohol. Then the "paint," prepared as above, and having previously been melted, is to be applied to the leg with a paint brush, just as you would apply paint. Paint over the ulcer, paying no attention to it. Leave out the toes. Extend dressing nearly to knee. Keep the paint hot while using it by putting the vessel in which it is contained into another vessel containing hot water—an extemporized water bath. Stir from time to time, in order that the mixture may be homogeneous. After the leg has been thoroughly painted, apply an ordinary bandage. The bandage should be two or two and a half inches wide, and made of firm but coarse material, with open meshes. The painted surface must be evenly and accurately covered, but the bandage must make no wrinkles or reverses. This makes it necessary to put it on in pieces. Let the bandage take what course it will, and when it cannot be applied further without making a wrinkle, cut it off and start anew. Keep on this way until the whole painted surface is covered with the bandage, being careful to close in the heel and ankle joint well. Apply to this bandage another coat of paint, just as was done in the first place to the bare leg. Then apply another layer of bandage, fortifying any weak spot with an extra piece of bandage, and more paint, so that there is exerted an even pressure all over. Then another coating of paint and bandage. The dressing should be from three to five bandages in thickness. Complete the dressing by giving the last bandage a good coating of paint. For a few hours the completed dressing is somewhat sticky; so it is well, for the sake of cleanliness, to cover it with an ordinary roller, which may be removed later.

The essential points to be remembered in applying the dressing well are: to make it fit firmly and evenly all over; it should fit like a glove; do not try to put on too long a strip; use plenty of paint; leave no weak spots.

The dressing should wear from four to eight weeks. Should

it become loose from diminution in the size of the limb, remove it and apply another. As ulcers of the leg are usually accompanied by swollen or œdematous condition, and as this condition rapidly diminishes under this treatment, the dressing may need frequent change. Should the ulcer secrete pus, rendering the use of local applications desirable, a wet spot will make its appearance on the dressing over the seat of the ulcer, within a few days after its application. In this case a fenestrum may be cut through the dressing sufficiently large to expose the sore. Through this hole the necessary application can be made, and the fenestrum closed evenly and nicely with cotton, or gauze, held in place by means of a bandage. The application may be eucrophen, iodoform, boracic acid, or whatever cicatrizant is preferred. As the ulcer rapidly becomes smaller it is well to make the fenestrum only large enough to expose it.

This plan of treatment is applicable to all ulcers of the leg, from whatever cause they may be produced. In some cases in which there is a *great varicosity*, ligation and excision should be done first. If the ulcer is syphilitic, the constitutional treatment should be conjoined.

It is also applicable to many cases of chronic eczema, and to cases of œdema from whatever cause. In cases of synovitis, or chronic sprain, in either the upper or lower extremity, it can be used to secure fixation of the affected part. This it accomplishes nearly as efficaciously as, and much more agreeably than, plaster paris."—*The Chicago Clinic, Vol. XIII., No. 8.*

GALL STONES.

After presenting a detailed account of ten cases, Dr. Dudley P. Allen says:

"The object in thus detailing in as few words as possible the above histories has been to show that in cases in which there were none of these evidences ordinarily supposed to indicate the presence of biliary calculi, these may be found in considerable numbers and removed. Further, they illustrate the fact that it is extremely difficult at times to conclude that the symptoms present do not arise from an abscess of the kidney or of the appendix.

The main thing, however, which the cases demonstrate, is that it is necessary when patients are suffering from pain in the upper and right side of the abdomen carefully to consider the possibility of such suffering being due to gall-stones, or inflammatory adhesions, and that it is of the greatest importance that these symptoms should be given early and careful consideration. To delay may result in the formation of inseparable adhesions, so dense as to render any operation for the relief of the patient one of the most difficult in surgery. While there is much encouragement to open the abdomen in proper cases, this should not be done until all means of diagnosis have been exhausted. By a careful study of diseases of the stomach much has been done during recent years, both in accurate diagnosis and in rational and successful treatment. Indiscriminate and needless operating should under no circumstances be countenanced, whether the operation be undertaken to relieve functional disturbance or malignant disease. There are, however, in addition to the cases presenting the classic symptoms of gall-stones, others lacking many of the ordinary evidences of their existence. The removal of gall-stones in such cases is an operation of greatest benefit. It must not, however, be forgotten in this connection that it is beyond the skill of the ablest specialists in stomach diseases, whether medical or surgical, to diagnose many of the diseased conditions that may exist.

The object of this paper is to establish three propositions.

1. That in cases of continued distress in the epigastrium, when a physician skilled in modern methods of investigation, both clinical and physical, can make no positive diagnosis and give no relief, an exploratory operation is advisable. How it is to be completed must depend upon what it found.

2. That operation under such conditions frequently results in the removal of gall-stones or the setting free of adhesions, and entirely relieving the patient's suffering.

3. That such operations should not be too long delayed, since the formation of dense adhesions, such as are found not infrequently, may greatly enhance the difficulty of operating and endanger the life of the patient."—*Cleveland Journal of Medicine*, Vol. V., No. 8.

APPENDICITIS AS A COMPLICATION OF PELVIC DISEASE.

Dr. A. Laphorn Smith believes "that dysmenorrhœa, which is a common disease in young girls, is frequently due to disease of the tubes; secondly, that disease of the tubes is often due to infection from the vermiform appendix; and thirdly, that disease of the vermiform appendix or appendicitis is always due to infection by the colon bacillus, and that the colon bacillus increases in numbers in proportion to the length of time the bowels remain unmoved. My own experience in over a hundred operations for pus tubes quite bear out this theory; for in about fifteen cases the vermiform appendix was adherent to the right tube and in one case to the left tube, and in nearly all there was severe dysmenorrhœa. Although gonorrhœa was the principal cause of the pus tubes, yet in some of the cases there was no possibility of this being the case as they were young girls of irreproachable character. Many of these cases occurred in the practice of *confreres* who called me in consultation; in some of them appendicitis had been diagnosed and in others salpingitis, but at the operation both conditions were found to be present, so that there was no mistake in the diagnosis. The lesson to be learned is that the first thing to do in treating dysmenorrhœa and inflammation of the right side of the pelvis is to have the bowels thoroughly moved. No reliance must be placed on enemata for this purpose as they only empty the rectum. Ten grains of calomel followed in five hours by a saline. Several cases have recently been reported where all arrangements had been made for removing the appendix, but as soon as the calomel and saline had moved the bowels the patient rapidly got well. However, when a patient has had more than one attack, however slight, she should have the appendix removed soon after recovering from the second attack, while in severe attacks incision and drainage should be done within twenty-four hours."—*Canada Medicine Record*, Vol. XXVIII., No. 6.

THE TREATMENT OF ABORTION.

Concluding an article on this subject, Dr. Henry B. Stehman says:

"The principles underlying the treatment of abortion and its complications are briefly as follows:

1. The rendering of the vulva, vagina, and uterus aseptic, and so far as possible maintaining them so.

2. Arresting of hemorrhage, either by use of the tampon in the cervix or vagina, or by directly emptying the uterus.

3. In inevitable abortion, the ovum, or any part of the product of conception, should be removed as early as possible.

4. That intelligent curettage is invariably indicated wherever a vestige of placental decidua remains or any suspicion of infection is in evidence, and that bacteriological differentiation is necessary both from the standpoint of prognosis and treatment.

5. When circumscribed local infection is a complication, evacuate the pus as early as possible and by the shortest route."

—*Medicine, Vol. 6, No. 8.*

EXTRA-UTERINE PREGNANCY.

Dr. Charles W. Aitkin reports the following unusual case:

"I saw this patient, with the late Dr. D. D. Peck, when she was five months advanced. Dr. Peck had already diagnosed an extra-uterine pregnancy, but was opposed in this opinion by a prominent gynecologist. When I saw the case the fetal heart could be distinctly heard. The patient would not believe but that at full term she would be delivered, as she had previously borne children without complications. Quickening occurred at the usual time, and at the expected time, *with her*, for confinement, she began to suffer pains, which were of such intensity that the family physician spent the greater part of two days with the patient. Following the cessation of the severe pains the patient continued ill for over two months, and it was not until the end of the eleventh month that movement entirely ceased. The patient gradually improved in health, and for

nine years she was able to attend regularly to the duties of a housewife. At this time she began to suffer with severe pains throughout the abdomen; the pains continued for two months, when a perforation occurred in the descending colon at the sigmoid flexure. The fluid largely escaped, passing off per bowel. The patient became much smaller, and was temporarily relieved, but in a few days the pains became unbearable from the pressure caused by the sharp angles of the extremities. This was ten years after conception took place. The patient now asked earnestly for an operation, and, acceding to her desires, her attending physician, Dr. Morford, requested me to open the abdomen and remove the fetus. The fetus was found in a fair state of preservation; the surrounding sac, however, was nearly perforated at several points where pressure was greatest. The patient never fully rallied from the shock."—*The American Practitioner and News*, Vol. XXX., No. 62.

EARLY USE OF OBSTETRICAL FORCEPS.

In a paper read before the Ohio State Medical Association in May, Dr. J. M. Fassig of Zanesville, strongly urges the earlier use of obstetrical forceps. He maintains that physicians delay too long. No one feels that he is doing wrong to put on the forceps when all other hope is gone. But that means very grave danger to the child and far more to the mother than if undertaken earlier. When it becomes apparent that nature is unable to finish the second stage of labor within the usual time, and no progress is being made, then the author believes it is best not to wait but to put on the forceps and help nature. This procedure, he maintains, is becoming more common and our experience bears him out. The skilled accoucheur does not sit by for hours without some reason. Skill in the application is of course necessary. A few points may be noted here. The four fingers of the hand not holding the blade are used as a guide and serve to protect the soft tissues. Ether is not administered till the forceps are in place and loosely locked. If we wait for one pain, nature will give evidence of the direction in which traction should be made. Steady, slow, deliberate, firm effort is the safe and successful way. Make careful diagnosis of the position of the head and then apply surely high enough, so that there shall be no slipping.—*Columbus Medical Journal*, July, 1900.

DEPARTMENT OF PEDIATRY.

ORIGINAL COMMUNICATIONS.

"THE VALUE OF USING A NON-CONSTIPATING FORM OF IRON."

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The question often arises as to whether the good effects derived from many of the preparations of iron on the market, are not counterbalanced by the constipation they tend to produce. This is an important consideration, especially in the treatment of women, among whom those diseases which require the use of iron most frequently occur, when we consider that constipation is the rule rather than the exception. I have found in several cases of anæmia that have come under my care that the headaches which were considered of anæmic origin were aggravated by the use of Iron when given alone, and relieved when a laxative was given with it, combined with a suitable dietary and exercise. It is a matter of conjecture as to whether these headaches were not of toxic origin from constipation, but I do not think so on account of the fact that many of them had been treated previously for other complaints during which any tendency to constipation had been relieved by the use of suitable remedies.

During the past two years my attention was called to a preparation which had been placed on the market, composed of an insoluble Phosphate of Iron suspended in a suitable aromatic menstrum. Of course this in itself would be of little value, the precipitate being neutral in reaction and insoluble either in water or the hydrochloric acid of the stomach, this being an advantage as it does not discolor the teeth, which is the chief reason advanced by the laity against the use of iron. In order to overcome this condition the administration of the liquid is followed immediately by a small quantity of water containing sufficient sodii phosphas to convert the iron into a soluble bi-basic

salt of iron and sodium phosphate. The excess of phosphate acting as a mild hepatic stimulant and in this way exerting a mild laxative effect on the bowel, as the phosphate is one of the least astringent salts of Iron, it has little tendency to cause any of the gastric disturbances so often seen when the use of iron is long continued.

During the past spring I have been using this preparation in charity and clinical work, and the results that were derived from its use in over fifty cases, substantiate the claims that have been made for it, while only eight of these cases were selected as being typical and in none of them were any constipating or other manifestations of gastro-intestinal disorders seen.

In children of tubercular tendencies and in those suffering from anæmia, the results of frequent and continued attacks of indigestion, either gastric or intestinal, setting aside the possibilities of specific disease as the primary cause, the *Syr. Ferri Iod.* rather tends to make their condition worse than to improve it. The same could also be said of many of the preparations of *Peptomangan*. These children at the best suffer from a weakened vitality, and what would not disturb a child in normal condition becomes an irritant in the gastro-intestinal tract. The *Syrup Ferri Iodid*, is objectionable from the difficulty with which it is absorbed, and *Peptomangan* from the large doses that are required, and the ensuing constipation which it produces. It is in these cases that this Phosphatic preparation of Iron has been used with so much success. So great has been the benefit derived from its use, that it has displaced other forms of Iron almost entirely at my clinic.

I call attention to the following cases in which this preparation was used with good results. 1. The first is that of a boy, T. W., age 7 years, who has been suffering for the past three years with insufficiency of the mitral valve, following an attack of Rheumatic Endocarditis, and at the present time is confined to bed as a result of over-exertion, which has caused a rupture of compensation.

This boy, at his best, has always been more or less anæmic, and undersized, frail and poorly developed, although very active, and until lately has shown no clubbing of the finger tips.

This has, however, followed a severe attack of Scarlet Fever, from which he had fully convalesced, some four weeks past. The counts were made following and during convalescence from this illness. The first count made on April 6th gave the Hemaglobin 54 per cent. and the Red Corpuscles 2,390,000; the second, one week later, on the 13th, with the Hemaglobin 65 per cent. and the Red Corpuscles 2,800,000; the third on May 5th showed an increase in Hemaglobin to 80 per cent. and the Red Corpuscles to 3,500,000; and on the 16th, when the last count was made, the Hemaglobin was 82 per cent. and the Red Corpuscles 3,900,000, an increase of 25 per cent. in the Hemaglobin, and 1,510,000 Red Corpuscles.

II. The next case is that of a young married woman, M. C., age 27 years, who had been treated for Syphilis, although nothing of a like nature has manifested itself in any one of the three living children, one of whom is still at the breast. The last child was premature at 3 months, with considerable shock from the loss of a large quantity of blood. The first count was made on April 12th, the Hemaglobin being 27 per cent. and the Red Corpuscles 2,100,000; the second count made on April 20th revealed 45 per cent. of Hemaglobin and Red Corpuscles 2,800,000; the next count made on the 28th, the Hemaglobin being 65 per cent. and the Red Corpuscles 3,290,000; on the 3rd of May the fourth count showed the Hemaglobin to be 77 per cent. and the Red Corpuscles 3,920,000; the fifth and last count was made on May 10th, the Hemaglobin being 82 per cent. and the Red Corpuscles 4,210,000, an increase of 55 per cent. in the Hemaglobin and 2,110,000 in the Red Corpuscles, the patient gaining her former strength and good color.

The next case is one of a girl, M. F., age 16 years, a topper by occupation, suffering from anæmia, accompanying chronic indigestion, the result of continued over-indulgence in eating **and of unsuitable food.** She had been subjected to frequent **attacks** of headache, accompanied by a feeling of nausea, but **never any actual vomiting:** this was relieved to some extent by the use of suitable glasses, but never entirely. I had prescribed Bland's pills for her for some time, but had to discontinue them for the reason that they made her stomach condition worse, and

caused obstinate constipation. I placed her on Aromatin, on the 3rd of April, the count at this time was, Hemaglobin, 62 per cent. and the Red Corpuscles 3,500,000; the second count made on April 13th, the Hemaglobin being 67 per cent. and the Red Corpuscles 3,700,000; the third count one week later, the 20th, gave the Hemaglobin 72 per cent and Red Corpuscles 3,950,000; the next count made on the 27th of April showed the Hemaglobin to be 75 per cent and the Red Corpuscles 4,120,000; the fifth count made on May 5th showed the Hemaglobin to be 78 per cent. and the Red Corpuscles 4,267,000; the sixth count made on May 16th gave the Hemaglobin 80 per cent. and Red Corpuscles to be 4,300,000, the increase being 18 per cent. Hemaglobin and 800,000 Red Corpuscles. While taking this preparation the young woman had a daily bowel movement which before had been attained by using the Ext. Cascara Sag. fl. nightly before going to bed.

The next case is one of a child 7 years of age, A.B., during recovery from Measles complicated by Pneumonia. Child suffered greatly from exhaustion, and a severe cough, which persisted for two weeks, when it gradually disappeared. The counts are as follows: The first made on April 6th, Hemaglobin 70 per cent., Red Corpuscles 2,450,00; the second on the 13th, when the Hemaglobin reached 74 per cent. and the Red Corpuscles 2,720,000; the next was made on the 21st, the Hemaglobin being 70 per cent. and the Red Corpuscles 3,250,000; the fourth, made on the 28th, the Hemaglobin was 78 per cent. and the Red Corpuscles 3,300,000; the fifth, made on May 6th, showed the Hemaglobin to be 82 per cent. and the Red Corpuscles 3,700,000. The net increase was 12 per cent. of Hemaglobin and 1,250,000 Red Corpuscles. The child recovered her appetite and color, and with a marked improvement in her general condition.

The next case is one of a woman, J. D., age 48 years, married, and the mother of four grown up children. She had suffered for the past two years with periodical attacks of neuralgic headache, following worry and over-work, and the lack of suitable food. These attacks occur once every two or three months, and are severe, persisting for twelve hours, leaving the patient very

much exhausted. The counts began on April 5th, the Hemaglobin being 64 per cent., the Red Corpuscles 1,450,000; the second on April 14th, the Hemaglobin being 70 per cent. and the Red Corpuscles 2,240,000; the third made on the 20th showed the Hemaglobin to have increased to 72 per cent and the Red Corpuscles 2,900,000; the fourth made on May 2nd, the Hemaglobin was 75 per cent. and the Red Corpuscles 3,500,000; the next count made on the 15th showed Hemaglobin to be 82 per cent. and the Red Corpuscles 4,010,000, an increase in the Hemaglobin of 18 per cent. and Red Corpuscles of 2,560,000, with no recurrence of the attacks.

The next case is that of a girl, A. R., topper by trade, who has suffered considerably from Dysmenorrhea, she had considerable flow at the appearance of the menses, but which disappeared for some six months, during which time she suffered from a great deal of pain at the period. The girl is extremely pallid, although well developed, and since taking this preparation has now menstruated twice without any discomfort, her general condition being greatly improved. The first count made on the 6th of April, gave the Hemaglobin as 68 per cent. and the Red Corpuscles 2,250,000; the second on April 16th showed the Hemaglobin to be 74 per cent. and the Red Corpuscles 2,600,000; the third on April 30th, the Hemaglobin was 77 per cent. and the Red Corpuscles 3,250,000; the fourth count made on May 10th revealed Hemaglobin 82 per cent. and Red Corpuscles 4,100,000; the fifth and last examination made on May 17th showing the Hemaglobin to be 84 per cent. and the Red Corpuscles 4,210,000. There was an increase of 16 per cent in the Hemaglobin and of 1,960,000 in the Red Corpuscles.

The following case is one of a young woman, C. P., age 26, single, frailly built and extremely anæmic woman, who has suffered for the past six months with post-nasal catarrh; she has always been extremely pallid, and at the present time the mucous membranes are pale and lacking the pink blush seen under normal conditions. She was placed on Aromatin on the 7th of April, when the first examination was made, the Hemaglobin being 70 per cent. and the Red Corpuscles 2,500,000; the second examination was made on April the 12th, the

Hemaglobin increased to 73 per cent. and the Red Corpuscles to 2,800,000; the third count made on the 20th, showed the Hemaglobin to be 70 per cent. and the Red Corpuscles 3,250,000; the fourth count made on the 1st of May, showed the Hemaglobin to be 78 per cent. and the Red Corpuscles 3,960,000; the last and fifth count made on the 14th of May, gave the Hemaglobin as 80 per cent. and the Red Corpuscles as 4,180,000. This was an increase of 10 per cent. in Hemaglobin and of 1,680,000 in the Red Corpuscles.

The last case is that of a child, L. T., age 5 years, who had an attack of Parenchymatous Nephritis following Measles. The urine contained a few casts, epithelial cells, but no blood, and a small quantity of albumen. The urine was scant and high colored. There was accentuation of the second sound of the heart. The first count was made on April 19th, at which time the kidney trouble had developed. The Hemaglobin was 72 per cent. and the Red Corpuscles 3,225,000; the second, made on the 30th, revealed the Hemaglobin to be 74 per cent. and the Red Corpuscles 3,600,000; the third count made on May 10th, revealed Hemaglobin 78 per cent. and the Red Corpuscles 3,875,000; the fourth and last count made on May 19th, showed the Hemaglobin as 80 per cent. and the Red Corpuscles 3,960,000, an increase of 8 per cent in the Hemaglobin and of 735,000 in Red Corpuscles. The albumen and casts in this child's urine has entirely disappeared and the pallor has disappeared, her appetite is good and has been accompanied by a decided increase in body weight. I would call attention to the fact that in none of these cases was any constipating effects produced or any tendency to disturb the stomach.

1935 E. Cumberland Street, Philadelphia.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, June 12, 1900.

THE PRESIDENT, DR. ALFRED STENGEL, IN THE CHAIR.

Dr. Jos. Sailer exhibited a case of "Spurious Meningocele of the Occipital Bone."

The patient was a child four years of age, who, about Christmas time, fell down stairs and was drowsy for two hours afterward. A month later she developed vomiting, strabismus, and staggering gait. The condition had grown steadily worse, and about three weeks before she was shown, a pulsating tumor appeared in the occipital region in the neighborhood of the external occipital protuberance. It communicated with the cranial cavity by an irregular opening in the occipital bone. A thrill was felt by palpation and a murmur heard on auscultation. An exploratory puncture proved that the tumor contained blood.

DISCUSSION.

Dr. W. R. Wilson: I have been extremely interested in the case and feel that I can add little of value because my knowledge of these conditions has to do with tumors of congenital origin.

There are two points of importance, however, which occur to me: In the first place, the absence of increase in tension in the tumor. In the meningocele the increase of cerebro-spinal fluid would cause increase in pressure during the effort of crying to such extent as to distend the sac and augment the tension of the sac wall. I should think that this would be an important sign in this case, inasmuch as the tumor has been of short duration and has yet been rather extensive, showing that the separation of the bone, the result of traumatism, has permitted a rapid discharge of fluid.

The second point is, that the surface of the tumor does not resemble the covering of such cystic tumors when found in the

congenital instances of meningocele and in spina bifida. I might allude to one point in the differentiation of congenital tumor, that is, the situation of the separation of the bone. In as far as I have been informed, in the congenital tumors, the protrusion of the membrane occurs usually through the separated portions of the calvarium, that is, in the sutures and fontanelles. Therefore, in meningocele of congenital origin we have a protrusion above the occipital protuberance rather than in the region of the protuberance; in a like manner a tumor situated inferiorly to the occipital protuberance may find its exit in the region of the foramen magnum. The hinge-like joint between the basilar portion and the squamous portion of the occipital bone may also offer a yielding partition through which the hernia is apt to protrude.

Dr. Jopson: I have little to add to what Dr. Sailer has said. The tumor, whatever its nature may be, has apparently its origin from within the skull. Cases have been reported in which angiomas have so eroded the skull from without that connection with the sinuses has been established; but the fact of the strabismus and other symptoms of pressure being noticed before the tumor tends to show that the origin is from within the cranial cavity. I do not think we can altogether exclude angiosarcoma, which would produce pressure upon the brain and by erosion or separation of the bones at this point would produce a pulsating tumor externally. Cases of so-called "sinus protrusion" have been described due to protrusion of the longitudinal sinus through an ununited fontanelle or imperfectly ossified bone and associated with rickets. My own opinion is that the tumor is some form of angioma or dilatation of the blood vessels which communicates with the sinuses at this point, and that the pulsation is derived from communication with an artery or from the transmission of the pulsation from the brain.

Dr. Sailer in closing: I am glad to have had Dr. Wilson's support upon the improbability of the congenital origin of this tumor. I was satisfied that it was not congenital, but could not make as satisfactory a differential diagnosis.

The sinus protrusion to which Dr. Jopson refers has been described by Stromeier, but as I understand, it is essentially dif-

ferent in character and nature from the present lesion. The fact that the tumor developed a long time after the symptoms of brain pressure, is, I think, sufficient proof that it was not due to distention of the veins of the diploë. Its long duration and the flourishing general condition of the patient is against its sarcomatous nature; particularly is this true in so young a child.

The most important point is the treatment. I had hoped that Dr. Jopson would discuss this more fully because it is a surgical and not a medical question. In the case of spurious meningocele, operation has been performed almost invariably and in many of the cases, especially since the introduction of antiseptics, the operation has been entirely successful.

I want to lay stress upon the report that Dr. Shoemaker has kindly furnished me. He says there is no choked disc. A tumor producing much pressure in the occiput ought to produce choked disc. Neither is there paralysis of the ocular muscles. Left hemianopsia is not made out.

Dr. Alfred Hand, Jr., reported six cases of so-called Glandular Fever, the main symptoms, as described by E. Pfeffer, being irregular fever with enlargement of the cervical glands beneath and posterior to the upper end of the sterno-mastoid muscle. Three of the cases were mild, terminating in a few days, the other three lasting from one and a half to three weeks, and presenting so great an enlargement of the glands that there was decided torticollis, the swelling extending from near the angle of the jaw to the middle line posteriorly. None of the cases suppurated, a result which was thought to be due largely to the free use of ichthyol in the form of a 25 per cent. ointment, although in one case where this did not seem to control the swelling, pure ichthyol was applied on lint, with a rapid subsidence of the gland. Study of cultures taken from the pharynx in three of the cases gave varying results, streptococci predominating in one, staphylococci in another, and the third being a mixture of both with diplococci and a few small bacilli (not the diphtheria organism). In view of the obscure and evidently varying etiology, the term suggested by A. Muggia, acute cervical lymphadenitis, is held to be without dogmatism as to the cause, while the term glandular fever conveys the idea of a dis-

tinct disease with a specific infection. Bacteriology may at some time prove such to be the case, but until that time the term glandular fever is held to be an unnecessary and therefore undesirable addition to disease-nomenclature.

Dr. J. Crozer Griffith reported the histories of two outbreaks in households of what might at first thought have been taken for the so-called glandular fever, but which further study showed to be without doubt influenza with lymphatic involvement. In one family three children exhibited the affection of the glands. In the other household four persons were ill with what seemed to be the same infection in each case, although only two of them showed glandular swelling.

DISCUSSION.

Dr. A. E. Roussel: This subject is of particular interest to me for the reason that three years ago I read a paper before the Philadelphia County Medical Society, in which I reported four cases of glandular fever, one an adult. Since that time I have seen other cases and noted reports by foreign observers; indeed, some of the recent text-books, such as *Ander's Practice* and *Ashby and Wright* have added this subject to their list.

I believe that the cases are suggestive of a particular infection, the cause of which is not yet known. In most instances the throat seems to be somewhat congested, and in every group of cases there was a disproportionate rapidity of pulse as compared to the fever which caused the onset to be suggestive of scarlatina.

I must confess that some of the recent descriptions of this disease are markedly different from the original case mentioned by E. Pfeiffer, and in these instances the enlarged glands are to my mind, doubtless due to other and varied causes.

And on the other hand we must avoid the error of ascribing too much to influenza, which bids fair to take the place occupied by malaria some years ago, and which, like the latter, would probably be found much less common if bacteriological examinations were more frequently made.

As regards the treatment, I do not think it a matter of much

importance whether we use ichthyol or belladonna, because almost all the cases recover. I have only been able to find a record of two fatal cases and in these instances not only was the diagnosis questionable, but they occurred in weak and debilitated subjects. The convalescence, however, is generally slow and tedious.

Dr. S. N. Hamill: Some years ago, while engaged in preparing a paper on glandular fever, I was impressed by the wide diversity of opinion expressed by the various authors as to its etiology and symptomatology. If in my article I fixed upon any definite cause for the condition, as Dr. Hand seemed to intimate, I have forgotten the fact. I collected the causes given by the various writers, and while I emphasized the one most frequently mentioned, I suggested that owing to our indefinite data it was best to consider the etiology as undetermined. I have seen many cases of glandular enlargement since this paper was written, and some of these have closely simulated the symptom-complex which Pfeiffer described. The etiology remains indefinite so far as I have observed. During the past winter, I have seen cases similar to those described by Dr. Griffith. I observed two children in the same family having an infectious condition accompanied by quite marked and rather earlier (than in the cases of Dr. Griffith) enlargement of the glands posterior to the upper portion of the sterno-cleido-mastoid muscle. There were some catarrhal symptoms present in both, and one child had a limited patch of congestion at the base of the right lung; the other had a mild bronchitis, and both a marked laryngitis. The trained nurse in charge of one of them developed laryngitis, which was accompanied by a marked febrile curve, with enlargement to the size of a pigeon's egg of the glands posterior to the sterno-cleido-mastoid muscle. There was not much pain or tenderness, and in all cases the subsidence of the swelling was more rapid than in the majority of cases of so-called glandular fever. There was no fixation of the head, nor was there any complicating nephritis as in the majority of Pfeiffer's cases. The maximum temperature in the worst of these cases was 104°. The temperature did not fluctuate materially, and reached the normal about the 3rd day. While it is true that an epidemic

disease, in some respects resembling influenza, was prevalent at the time these cases developed, I am not satisfied that without bacteriological examination we would err as much in calling them influenza as we would in calling them glandular fever. I believe we are making too wide application of the term influenza. Yesterday I saw in the Howard Hospital, an acute enlargement of the glands under and posterior to the right sternocleido-mastoid muscle, which was accompanied by wry-neck, in a boy aged 9 years. The glands were the size of a hen's egg; the surrounding cellular tissue was much infiltrated, giving a board-like hardness; the body temperature was 103° F. The child had been ill for three or four days. There was some tenderness on pressure and the head was held fixed. Examination of the throat revealed marked redness of both tonsils, more especially of the right. There was no exudate, and no redness beyond the tonsils. The exact nature of this case owing to the fact that the child was seen but once in the dispensary service, remains undetermined, but it seems to resemble glandular fever in many particulars.

I agree with Dr. Hand in believing that the majority of cases described as glandular fever are not dependent upon a common cause. There is a class of cases, however, similar to those reported by Pfeiffer, which, whatever their etiology may be, certainly have the same symptom complex. I am not sufficiently satisfied that it is a bad thing in the absence of any other classification to describe these cases under the term of glandular fever.

Whatever may have been the purpose of Pfeiffer's original communication he has certainly accomplished much good by stimulating interest in a subject which had up to the time of its appearance, been more or less neglected.

The case which I reported to this society a few years ago in connection with the paper referred to, was unique in my experience as well as in that of one of the ablest practitioners in Philadelphia, who saw the case in conjunction with me. The case had none of the characteristics of the so-called acute cervical adenitis, but did, on the other hand, bear a close resemblance to the cases described by Pfeiffer barring the fact that

there was not a complicating nephritis present. Cultures made from the throat in this case showed the presence of staphylococci and streptococci. It is impossible to say whether or not they had anything to do with the development of the condition. There was no epidemic of influenza prevalent at the time, and there was no other person ill in the house.

Dr. Hand's reference to the presence of a rapid pulse in his case reminds me of two cases which I observed in the same family. In one child there was no history of any rash; in the other a rash was present, which the attending physician had described to the family as a scarlet fever rash, but not scarlet fever. There was no desquamation at the time I saw the child, which was about 9 days after the rash had disappeared. In both cases the temperature was elevated, and the pulse was unusually rapid. One child developed nephritis, which may have been connected with the glandular condition or may have been the result of a pre-existing scarlet fever.

Dr. Hand: The pulse rate was increased out of proportion to the fever in only the one case mentioned. While I am aware that the majority of these cases do not suppurate, yet this complication has been observed; and in three of the cases reported it seemed inevitable until ichthyol was applied; in other conditions this drug has been used to abort the formation of pus, as mentioned especially by L. Duncan Bulkley, and it seems reasonable to assign it some such influence in the cases reported.

Dr. William R. Nicholson, Jr., reported a case of "Melena Neonatorum probably due to the *Bacillus Pyocyaneus*."

The case was that of a male born at term in the Maternity Hospital of Philadelphia. Nothing of note occurred until the 16th day when a stomatitis developed. The actual bleeding began the next day and at first showed itself as a free flow from the mouth and throat. On the next day the stools contained blood and clear blood was afterward frequently passed.

Death took place on the 16th day. Its cause was apparently acute anemia. The autopsy showed the presence of an acute triple infection, the organisms present being the staphylococcus pyogenes aureus, the bacillus aerogenes lactus and the bacillus pyocyaneus. Of these the first two were general infections.

The bacillus pyocyaneus was found only in the bile and tissue of the liver.

The gross lesions found at autopsy were a generalized parenchymatous degeneration, a sclerosis of the pancreas, an acute enteritis and commencing cirrhosis of the liver. There were no signs of syphilis other than sclerosis of the pancreas, a condition which occurs also in many other diseases as Kasahara has shown. There were no signs of ulceration detected.

The reasons given for considering the case to have been one of pyocyanic infection were: the negative history of the first 16 days of life with the subsequent development of symptoms explainable only upon the assumption of an infection, and the detection of the bacillus pyocyaneus. The influence of the other two infections was considered to be predisposing.

No explanation was given as to the manner in which the infection occurred, but it was suggested that, as the ordinary means seemed out of the question, it might have depended upon a lack of cleanliness of the nipples of the mother.

DISCUSSION.

Dr. S. M. Hamill: This paper has interested me very much. Recently I have been studying the cause of death in new born children. Dr. Norris has kindly placed at my disposal the children dying in the Preston Retreat. In a number of autopsies I have made cultures from the liver, spleen, kidney, and the heart blood. In 2 instances the colon bacillus was present. This, however, is of no significance, since it is commonly found post-mortem in almost any portion of the body. In other cases the inoculated tubes remain sterile.

I believe with Dr. Nicholson that in the majority of cases of hemorrhage in the new born the condition has an infectious origin. In one of my cases dying from hemorrhage into the right suprarenal capsule with subsequent rupture into the peritoneal cavity, the bacteriological examination was negative. While it is probable that hemorrhagic disease of the new born is most commonly of an infectious nature, it is unquestionably true that there are other ways of accounting for the isolated

hemorrhages into the suprarenal glands; the location of the organ, the richness of its blood vessels, especially of its veins, the proximity of the inferior vena cava which receives the blood almost directly from the gland on the right side, are probably indirectly responsible for the majority of these hemorrhages. As Droubaix has suggested, it is easy to understand how, during labor, pressure can be brought to bear upon the inferior vena cava and the suprarenal gland, located as they are between the liver anteriorly and the vertebral column posteriorly, thereby giving rise to congestion of the vessels of the glands which in some instances may result in hemorrhage. There has been comparatively little useful work done in the study of the cause of hemorrhagic diseases in the new born, and I feel that Dr. Nicholson's contribution is, therefore, of unusual value.

Dr. C. A. E. Colman reported a "Case of Leukemia" in a boy 17 years of age. The fairly good color of the skin and mucous membranes, the almost entire absence of symptoms, and the presence of a tumor in the abdomen of a boy, two of whose sisters had recently died—one of tuberculosis and the other of sarcoma—made the diagnosis without the examination of the blood, somewhat doubtful.

The study of the blood, however, showed the true nature of the disease.

There was only 25 per cent of hemaglobin—a surprisingly low percentage when one recalls the good color of the skin and mucous membranes. There were 2,730,000 red blood corpuscles, and 443,600 white blood corpuscles—a ratio of 6 to 1. The differential count of the leucocytes was as follows: polynuclear, 50.9 per cent.; mononuclear, 9 per cent.; transitional, 4.5 per cent.; lymphocytes, 5 per cent.; myelocytes, 25.5 per cent.; eosinophilic myelocytes, 2.5 per cent.; eosinophiles, 3.6 per cent. Microcytes, macrocytes, poikilocytes and nucleated reds were present.

SELECTED ARTICLE.

THE TREATMENT AND TRAINING OF FEEBLE-MINDED CHILDREN DURING INFANCY.

JOHN P. STEWART, M. D.

Superintendent of "The Stewart Home," a private institution for the care and training of persons of backward mental development, Farmdale, Ky.

Since 1833, when Dr. Edward Seguin, a pupil of Itard and Esquitol, began in a private way, and at his own expense, to train feeble-minded children, this work has progressed slowly, but surely.

On the first of October, 1848, the Massachusetts School for Idiots and Feeble-Minded Youths was established, and from that time on almost every state north of the Ohio river saw the necessity of such institutions. Now, all have magnificent plants fitted with all the appliances necessary to bring about the best results.

I wish my time would permit me to give a history of some of these institutions, and to show you to what perfection they have been brought by such men as Seguin, Wilber, Knight, Kerlin and Stewart. It is sad to know that they only met with success at the end of life's journey. Let me add here that we have one of the "Old School" still with us, Dr. G. A. Doran, of the Institute for Feeble-Minded Youths. He has had charge of this grand institution since its inauguration on April 17, 1857, and it has now over twelve hundred inmates.

So much for the early history.

We must not neglect this unfortunate class of children in the south. Is it right that we should help every other class of unfortunates, such as the insane, blind, deaf and dumb, and do nothing for the relief of the feeble-minded?

I will present a case: A child from one to two years of age attracts the attention of some member of the family, and by its singular actions arouses the fear that there is something wrong with it. The mother is notified of these eccentricities, and the matter is discussed by the family. She does not know what

is the matter with her child, she is not willing to admit that it could be mentally deficient. Indeed she is the last one to see it, and she resents with profound indignation the suggestion that it could be possible for her child to be defective in *any* way. She has, however, noticed that it does not respond to her affectionate embraces, and gives no heed to her efforts to attract its attention. She notices that it has no wants, or if it has, gives evidence of them only by cries or discordant sounds. It cannot walk, its muscular movements lack co-ordination; the vacant and expressionless eye, the inattentive ear, the slow development of the physical as well as the mental structure, all indicate that this child has come into the world "scarce half made up," and is of very low intelligence or an idiot. After many anxious hours, and days of watchful solicitude, the mother at last reluctantly admits to herself that all is not right with her little one. What a shock the knowledge of this is to all interested in this child. But the poor mother, what of her? In her despair she sends for her doctor. You see the child, perhaps you have noticed it before in your visits to the family, and have been too timid to tell the mother the truth. You are apt to decide hastily, that the child is beyond your help. She has sent for you, her doctor, in whom she has the utmost confidence, and believes with God's help you can restore to her child its lost or undeveloped reason. Are you to abandon her in this trying hour? It is your duty to have this child under your care, and to do everything possible to build it up, both mentally and physically, until old enough to send to an institution especially adapted to the care and training of this class. It is not right to place a child like this with the insane, and it is only cruelty to place it in the poorhouse. It matters not how well off a family may be, how many advantages the child may have at home, the best of teachers and nurses, it is impossible to train this child surrounded by home influences. And I say, insist on it being sent as early as possible to a school adapted to this work.

Mental defectives can be improved, many made self-supporting, and others developed so that they will be in after years, a pleasure to their friends. But this is not all. We must not consider alone, whether they can be developed, or whether it

pays to spend money and time in cases almost helpless. It is their happiness that we must first strive for, and the relief of the mother who has been so unfortunate as to bring this child to life. You have seen the imbecile in the family, and the mother with every feature of a once beautiful womanhood gone, and with nothing in view but the endless care of this unfortunate.

The names "idiocy" and "imbecility" are officially used to cover this class of mental defectives. The former includes the lower grades, and the latter the higher grades. It is, perhaps, due to the considerations of the feelings of the relatives that the term "feeble-minded" is used in this country "to include all degrees and types of congenital defect, from that of the simply backward boy and girl, but little below the normal standard of intelligence, to the profound idiot, helpless, speechless, disgusting burden; with every degree of deficiency between these extremes."

For convenience we divide this class into three grades, namely: "high," "medium" and "low." Those children belonging to the first class, with the best of training, in an institution of this kind, can be made self-supporting and perhaps self-directing. A child of the second, with years of training, can be improved so that instead of being a burden, it will be a pleasure to the family, and, while little improvement in the way of education, can be made with the third class, their training of habits, exercise, etc., is just as important. An idiot may be taught to dress himself and to attend to personal wants. A feeble-minded boy will perhaps develop so that he can go out into the world and make a living. In both cases we have been successful and have accomplished what we wished for.

Given a case of mental deficiency, what should be done? In the examination, the size, and form of the head, the shape of the palate, the movement of the limbs, and if any abnormalities of the feature exist. These outward indications will prove a very valuable help. Shuttleworth says: "The prudent medical examiner of children alleged to be defective, will not allow himself to be swayed too much by any class of observations, for it is only by comparing the signs of physical abnormality with those of mental defect, educational attainments being well as-

certained and weighed in the balance with those of similarly placed normal children of corresponding age, that a right judgment can be arrived at."

There are many causes for mental defects, such as heredity, mental weakness, consanguinity of parents, parental intemperance, neurotic parents, inherited syphilis, maternal sickness, shock or accident. We can attribute some as resulting from prolonged parturition and from the use of the forceps. It seems to give the parents some comfort to assign as the cause, an accident after birth, as a "fall" or "fright," but this must be taken with much caution. Traumatism is largely the cause when mental deficiency occurs after birth. The majority of cases are, however, congenital.

The infantile training should be commenced as soon as possible, and, under your supervision, the mother is the one to carry out your instructions. Seguin says: "As soon as any function is set down as deficient at the due time of development, the cause must be sought and combatted. If external, removed; if seated in the nervous apparatus, counteracted by the earliest course of training and hygienic measures. The arm of the mother become the swing or a supporter; her hand, a monitor or a compressor; her eye, a stimulant or a director of the distracted look; the cradle is converted into a class-room or gymnasium."

Owing to the fact that my time is limited, I will state briefly a few of the hygienic methods of treatment. The proper feeding and exercise, attended by plenty of fresh air, should be the essential points looked after. The child should have daily baths, and the muscles of the body and limbs massaged. This also has a tendency to produce a healthy skin. Teach the child to have cleanly habits, and see that it is properly clad.

This leads us up to the medical treatment, and I plead with you to be conservative in the matter of administering medicines to these children who are feeble in body as well as in mind. Situated as I am, I see the results of unwise treatment, prescribed with the hope that the child will be improved or "cured" mentally. It is said that epilepsy occurs in 25 per cent. of all feeble-minded children, and there is no doubt that the mental weak-

ness is the result of some drug, such as the bromides, rather than the disease. It is generally the belief that when epilepsy occurs in these cases, that the weakened mental condition is caused by the convulsions, but I know of cases where this was largely due to the continued use of some drug. My idea is this, that epilepsy has very little tendency to weaken the mind, but in our efforts to stop the convulsions, we keep the patient under sedatives, which will in time destroy all mental activity.

Careful attention must be given the mouth and teeth of these young children, and chlorate of potash washes used daily. Mal-nutritious children should be given cod liver oil, malt extracts and some iron tonic. In cases of chronic constipation, the continued use of castor oil, given once a day, will result in much good. The idea is to give nothing that will be harsh to the system. Surgical treatment should only be resorted to when traumatism is the result of the deficiency.

When the child is at a proper age (about seven years) it should be sent to an institution where it would be under the supervision of persons fitted by long experience in this particular work, to develop the dormant faculties. For parents able to pay, the private institution, of course, is to be preferred for the reason that individual training can be given and the child receive the same attention as at home. We gather up the fragments, that nothing be lost. We strive to develop the faculties left, we do not create those wanting. Industrial training is the key-note. To make a broom does not alone develop the muscle and steady the nerve but it brings in play all the mental faculties, compelling one to think and reason, and at the same time awakening interest and bringing forth enjoyment. What greater education for the feeble-minded can be had than this? We devote the morning to gymnastic and school work, and the school room is turned into a work shop in the afternoon. The smaller boys are taught to use the saw and hammer as early as possible. The larger boys do really fine work, the girls, fancy work and sewing. This is when they are happiest, and after the day is done and a few pleasant hours spent at the evening musicale, they are ready for bed. And Kentucky has the honor of being the first to introduce and successfully teach industrial pursuits to idiotic children.—*The Texas Clinic, Vol. 3. No. 1.*

REVIEW OF PEDIATRY.

PROPHYLAXIS OF SCARLET FEVER.

In urging the value of iodide of potash to prevent the spread of scarlet fever, Dr. W. E. Shepherd reports the following cases:

"CASE I.—I was called to see two negro children that had the disease in a very bad form, the fever of one running higher than I ever saw it and the patient recover in scarlet fever, 106.5° F.; they both recovered, and the third child did not have the disease. I had been treating him for several months for enlarged cervical glands with large doses of the iodide of potash. The next family I was called to see was that of a negro who had six children; he and his wife had tertiary syphilis: three of his children (the youngest) had syphilis, one secondary and two in tertiary forms; they had been on treatment for syphilis for some months with iodide of potash. Neither of the three who had been on treatment had scarlet fever; the three had the disease that were not on treatment, two dying and one recovered. The third case was in the family of Mr. V.; his children had contracted scarlet fever, and when called I found four with the disease and immediately put the three well ones on the iodide without either of the three having scarlet fever. About the time desquamation was completed his wife was confined and had a very severe attack of childbed fever. I boarded with the family of R. H. White, and gave his two children the iodide in large doses during the time without either of them having the disease.

The next case I call your attention to was in a family of negroes at Mr. John W. R.'s. This family lived in the yard with eight children. I gave Mr. R.'s children the iodide some days before the negroes broke out with the disease; neither of his children contracted it, though they were in the cabin every day during the time the negroes had it. Of the eight negro children, six had it; two died, and the two to whom the iodide was given did not have it. The mother took the disease, aborted, and died.

The next case I call your attention to, and the last in this epidemic, is that of Mr. T. He had two bright little daughters; he came to me while the disease was raging and wanted something to prevent his children from contracting the disease. I gave

them the iodide in full doses; one of the children would not take the medicine. In seven days he sent for me in the morning at eleven o'clock. I was not at home, and did not see her until one; she was a corpse at three in the afternoon, the first symptoms appearing at eleven that morning; the other child did not have it.

In February, 1888, at Hemp Ridge, Shelby County, Mr. McC. sent for me in the afternoon to see his little daughter, who was ill with high fever, and on my arrival I found her suffering from scarlet fever in its most virulent form, the child having been sick only a few hours. She was then having convulsions, and died in a few hours. His youngest child, who had not had scarlet fever, and my three (as they were there at the time the child was taken sick), were put on the iodide in full doses, and none of them had scarlet fever. In 1896 at Hemp Ridge, scarlet fever broke out in a very mild form, and many children had the disease before the nature of it was known. Mr. M. F. J. sent for me one morning to see his little son, who had just recovered from a hard siege of sickness, and I found him with a bad case of scarlet fever, dying the third day. The remaining three children were put on the iodide, and none had the disease.

A few more cases that have come under my observation within the past year will suffice. In December Mr. John Van D. sent for me to see his little boy, who had been on a visit with his uncle to Lebanon. He came home and was taken sick that night. I was sent for the next morning early, and found him with high fever, rapid pulse, and some rash, though no sore throat. I did not recognize scarlet fever in his case that morning; at noon they left word for me to go out and see him again, and I found him with a typical case of scarlet fever; sore throat, rash, and all the symptoms of scarlet fever present. His little sister was in the room all night, and in and out up till noon. I gave her the iodide in large doses and sent her to her grandfather's, and she failed to contract the disease. During the forenoon of the day I saw the child first there were several of the children in the neighborhood in his room; all of them had the iodide of potash, and none of them contracted the disease; the negroes in the yard were iodised, and none of them contracted it.

On the 21st of February, 1900, at six o'clock in the morning, I was called to Mr. Joe H.'s, across the street from where I live, to see his baby, eighteen months old. I found him with a very high fever, quick pulse, sore throat, and slight rash in flexures of joints, vomiting, and the typical strawberry tongue; I found the babe of Mr. A. on the bed with him, and three children of Mr. H. in the room. I cleared the room and put the four on large doses of iodide of potash. On my return at ten o'clock I found the child with a hard convulsion; temperature 106.5° ; he continued to have convulsions until six the next morning and died. The children in the neighborhood were all iodised as soon as possible, except two families consisting of six children, all of which had sore throats. I could give you many more similar cases, but deem this enough at least to warrant you in a trial of the iodide of potash for the prevention of scarlet fever."—*Louisville Monthly Journal of Medicine and Surgery*, Vol. 7, No. 2.

TYPHOID FEVER IN AN INFANT NINE MONTHS OLD; RECOVERY.

Dr. William P. Northrup, Professor of Pediatrics in the University and Bellevue Hospitals, New York, reports:

"The case which occasions this paper is the youngest undoubted case in the experience of the writer. It is that of typhoid fever in a female patient aged nine months. At the time of admission the father and two brothers were in the hospital with typhoid fever. The mother was not infected and nursed the baby at her breast. The infant had been crawling about the bed of its father, sick in his second week, and a brother sick seven weeks. The brother, who never came to the hospital, was the first member of the family to have typhoid fever—five being sick in all.

Previous History.—Twelve days before admission a physician took the temperature and told the mother the baby had the "same sickness." For a week previous to that the mother said the child's passages were frequent and greenish. They were frequent and greenish on entrance to hospital. There is a history of continued fever and diarrhœa; no convulsions.

On admission the child was plump, pale, no marked prostration; tongue coated, whitish; temperature 103° F. After an enema the child passed yellowish fecal matter, with considerable mucus and some rolled-up masses.

Symptoms and Course.—The abdomen was markedly distended, hard, tympanitic for two days, difficult to relieve. Turpentine stupes, high rectal enemata, and finally castor oil, were employed, with ultimate success.

Spleen, distinctly palpable, one and a half inches below free border of ribs; liver, one inch below free border.

Eruption: Characteristic rose spots, few in number, on abdomen and back. These appeared on the sixth day in hospital.

Cerebrum: The child was dull and stupid much of the time,, though never impressing one as very sick.

Passages continued frequent, soft, containing mucus and greenish pultaceous masses for about ten days. These were little affected by treatment, and seemed only to improve when the disease with temperature began to wane. By the nineteenth day of the disease the temperature was returning to normal, and the spleen was markedly diminished; then it was that the last mucus disappeared from the passages; slight cough, no pronounced signs of bronchitis.

The temperature reached 103° F. daily for the first nine days, and gradually fell away to normal on the twelfth day after admission. From the time the family physician first took the temperature to the end of the fever in hospital was twenty-four days.

Complications.—Pustules on scalp and back of trunk.

Symptoms.—The most troublesome were diarrhœa and tympanites.

Diagnosis.—This was confirmed on the following symptoms and signs: Continued fever, markedly enlarged (feelable) spleen, diarrhœa and distention, rose spots, Widal serum test (twice). The blood examination was of interest. Repeated examinations showed no plasmodium malariae, and no Widal reaction. Although the other cases from the same family showed a characteristic serum reaction, the infant's blood failed repeatedly to give the reaction. It was not till the twelfth day in hospital, and when the temperature had returned to normal, that the

Widal test confirmed the diagnosis. This was a perfectly satisfactory, prompt reaction with a dilute culture. To make assurance more assured, another test was made four days later; reaction positive and satisfactory. It may be added that the urine, drawn by catheter, had been twice cultivated, and no growth was reported. The last culture was on the day on which the Widal test was first reported positive.

Treatment.—Feeding of a nursling in typhoid fever naturally was most important. The mother came three times a day at first, and nursed the baby. Feedings were given of milk diluted with water and lime-water. The feedings seemed to disagree, as indicated by diarrhœa with passage of mucus and curds. It was therefore thought best to feed wholly on modified milk.

The following feedings were furnished by the Walker-Gordon Milk Laboratory. The milk was ordered "modified" according to a written prescription. This added an exactness in feeding and a record of proportions found useful in this case. The first prescription was:

Fat.....	2 per cent.
Sugar.....	5 per cent.
Proteids.....	0.75 per cent.
Feedings.....	10 in number.
Amount in each.....	2 ounces.
Alkalinity.....	10 per cent.

Heated to 155° F. twenty minutes.

This was fairly borne, and the proportions were increased as follows:

Fat.....	3 per cent.
Sugar.....	6 per cent.
Proteids.....	1 per cent.

Otherwise the same.

Flatulence, mucus, and curds indicated that the ingredients were not well borne. The proportions were changed to those of the first prescription.

After several days the symptoms were relieved, and the prescription was changed again to the proportions in No. 2. From this point the ingredients were gradually increased to:

Fat.....	4 per cent.
Sugar.....	7 per cent.
Proteids.....	2 per cent.
Alkalinity.....	5 per cent.
Feedings.....	5 in number.
Amount in each.....	6 ounces.

Heated to 155° F.

The writer has seen six cases of typhoid fever in patients of two years and under, viz., nine, thirteen, sixteen, twenty-two, and twenty-four months of age, and would conclude:

1. The diagnosis in all these cases was easily made on signs and symptoms characteristic of typhoid in adults.

2. The cases were all intimately associated with others in the family.

3. Skepticism should be encouraged concerning any diagnosis of typhoid fever in an infant (under two years of life) not intimately associated with other cases.

4. The most common mistakes arise from misnaming as typhoid the following diseases: grippe, subacute catarrhal enteritis, central pneumonia and malaria."—*The Medical Age*, Vol. 18, No. 9.

OPIUM IN SUMMER DIARRHEA OF CHILDREN.

This much disputed question is thus answered by Dr. Floyd M. Crandall:

"It is contraindicated (1) in the first stages of acute diarrhea, before the intestinal canal has been freed from decomposing matter; (2) when the passages are infrequent or of bad odor; (3) when there is a high temperature or cerebral symptoms are present; (4) when its use is followed by elevation of temperature or the passages become more offensive.

It is indicated (1) when the passages are very frequent, with pain; (2) when the passages are excessively frequent, large, and watery; (3) in dysenteric diarrhea preceded by castor oil or a saline; (4) in late stages, with small, frequent, nagging passages; (5) when the passages consist largely of undigested food, and the bowels act as soon as food is taken into the stomach.

The method of administration is of decided importance. The opiate should not be added to the ordinary diarrhea mixture, which is usually repeated at short intervals. It should be given alone. The dose can thus be regulated with much more certainty. This permits of the diarrhea mixture being largely increased if the exigencies of the case require. Intervals should be sufficient to permit the effect to partially subside before the dose is repeated. They should rarely be less than three hours, while four hours is more commonly advantageous. Lack of precision and exactness has been the cause of much of the harm that has resulted from the use of opium in diarrhea. Precision can only be attained by knowing the precise amount of each dose and the exact interval at which it is given. Opium is too potent a drug to be administered with the inexactness with which chalk mixture, bismuth, and the astringents are commonly prescribed. A little more or a little less of those preparations will do no harm; too much opium may be fatal.

The dose varies greatly, and it is impossible to lay down positive rules. It should be as small as possible, the object being to check peristalsis and relieve excessive pain. Narcotism should be strictly avoided. Under one year, the dose of opium or its derivatives as compared with other drugs is small.

The preparations most available for young children are paregoric and the deodorized tincture. Dover's powder is used by some practitioners. Morphine is very rarely required. When given hypodermically to young children, the dose should not be more than 1-200 grain. The dose of paregoric may be as follows: At three months, Mii; one year, Mviii; five years, Mxxx. The dose of the deodorized tincture may be at three months, M 1-12; one year, M 1-3; five years, Mii. The dose of Dover's powder may be at three months, gr. 1-12; at one year, gr. 1-3; at five years, gr. ii. It should be remembered that these liquid preparations are tinctures and the doses, therefore, if measured in drops, should be twice those given here. These doses are but approximate, and it may be necessary to diminish or increase them for different individuals."—*International Medical Magazine*, Vol. IX., No. 7.

HERNIA IN CHILDREN.

From a careful study of such cases, Dr. Edward A. Balloch finds that:

"1. Hernia is a not infrequent condition in children.

2. Of the forms of hernia, the umbilical is generally cured without operation, the femoral never, and the inguinal in from 70 to 80 per cent. of cases.

3. In view of the serious handicap in the battle of life caused by hernia, it is justifiable and proper to recommend an operation for the radical cure in children who have faithfully worn a truss for two years without benefit or in those cases where a truss cannot be worn.

4. The mortality from operation is less than would result from the accidents attending hernia were no operation done."—*American Journal of Obstetrics*, Vol. XLII., No. 272.

THE TREATMENT OF WHOOPING-COUGH.

"The medicinal remedies recommended in the treatment of whooping-cough have been many and strange, but nothing in the nature of a specific—nothing which can claim a uniform effect—has yet been discovered. No doubt there are drugs, such as antipyrin and opium, which tend to diminish the frequency of the attacks, but in the main we still rely on hygiene and diet in the management of our cases.

In its severer forms the attacks are so frequent and distressing that the practitioner gladly welcomes any new suggestion, but so many have been the disappointments that he not unnaturally views a fresh remedy with distrust. Antitussin, however, which is recommended by Max Helm (*Berl. Klin. Woch.*), has the great advantage of external and easy application. It is used in the form of an ointment—difluordiphenyl 5 parts, vaselin 10 parts, lanolin 85 parts—which is rubbed well into the neck, throat, and interscapular space, after the parts have been well washed with soap and water. In the sixteen cases in which he tried antitussin, Helm claims marked success, after quinine and belladonna had failed. The fits at once become less fre-

quent, and soon there is a marked relief in the distressing symptoms attending the fits. During an epidemic the author thinks that the application of the remedy in the earlier stage may prevent the development of the convulsive seizures.

Helm regards antitussin as the best known remedy for uncomplicated whooping-cough. The readiness with which it can be applied, and the absence of all gastrointestinal disturbances, should secure for it a thorough trial."—*The Medical Age*, Vol. XVIII., No. 15.

GROWTH OF CHILDREN AT SCHOOL.

"Some remarkable facts in regard to the influence of school life on the physical development of children have been gathered by Dr. Schmidt-Mounard, of Leipzig, who has spent several years in making the observations which have enabled him to arrive at certain definite conclusions. In the first place, he maintains that exact information as to the manner in which attendance at school effects the growth and weight of children is hardly attainable, but, on the other hand, he says positively that during the first year at school the growth of children, both as regards height and weight, is less than it was during any preceding year. Thus, he says that during this first year at school the average child gains only $2\frac{1}{2}$ pounds in weight, instead of 4 pounds as heretofore, and only increases 5 centimetres in height, instead of 7.

Further, he claims that children who do not go to school until they are seven years old become stronger, and are in all other respects better developed than those who go to school a year sooner.

According to Dr. Schmidt-Mounard, the physical well-being of children, and incidentally their growth, is in many instances injured by ill-health which is very often caused by their long confinement in unhealthy school rooms. Imperfect sanitary conditions and an inadequate supply of fresh air and light are, in his opinion, the main causes of such ill health. Chronic ailments, on the other hand, such as headaches, sleeplessness and nervous troubles, are to be found far more frequently among

pupils of the higher than among those of the elementary schools. They afflict severely during the period of youth, and frequently as many as fifty per cent. of the girl pupils suffer in some such way, while the number of boys who are similarly affected is never more than thirty-five per cent. Eight per cent. of the children of this age, says the Doctor, suffer from insomnia, the prime cause of which is undue excitement. In the higher boys' schools, in which the pupils are obliged to practise gymnastic exercises, and in which on such occasions no lessons are taught in the class room during the afternoon, the percentage of sufferers from some ailment varies from twenty to thirty-five, whereas in those schools in which there are no compulsory gymnastic exercises and in which the pupils are obliged to study every afternoon, the percentage is as high as seventy-nine.

In these latter schools eighteen per cent. of the boys complained that they could not sleep at night. In conclusion, the Doctor says that there are two main causes of these evils. One is because too much labor is imposed on children—he cites, for instance, the number of children who are obliged to remain indoors studying music—and the other is because in too many schools no steps are being taken to improve the physical condition of the pupils.”—*The Public Health Journal*, Vol. XIV., No. 6.

MALADIES OF SCHOOL CHILDREN.

“Delobel enumerates all the affections to which school children are especially liable. Some are due to conditions inseparable from the acts of study, others depend upon the commingling of many children in close quarters.

Of the former class, the most noteworthy representative is myopia. Imperfect light, poor type, the act of leaning forward during study, all these factors cause exaggerated efforts at accommodation and permanent congestion of the deeper membranes of the eye. Much and varied counsel has been given from time to time by ophthalmologists with a view of neutralizing this condition, but the measures recommended are simply those which are suggested by common sense.

Next to myopia, the most common school malady, due directly to study, is scoliosis. This deformity appears to be due entirely (aside from predisposition) to faulty attitudes. Scoliosis works much indirect harm to its victims. It lessens the capacity of the thoracic cavity, impedes the pulmonary circulation, disposes the patient to bronchitis and cardiac disease, etc.

• Headache is extremely common in school children, and may be regarded as a school malady. Nose bleed appears to be associated with it in many cases. In addition to the vicious attitudes which contribute to the production of scoliosis and myopia, imperfect ventilation and mental overstrain must also be regarded as factors.

Goitre, or at least passive congestion of the thyroid, due to the attitude of the child leaning forward upon its desk, has been mentioned as a school malady by Riant, Broca and others.

Cardiac and gastric disorders due to the inevitable vicious positions of the student were described at length by Motais, of Angers, in 1894. These affections, when due to this cause, quickly subside when the child is taken from school.

The author here takes occasion to repeat that all the foregoing maladies depend very largely upon faulty positions, and are, therefore, due directly to the act of study. School attendance is also liable, to a much smaller degree, to produce another train of morbid affections. Some of the latter are tuberculosis—to the production of which numerous minor factors contribute (mental overwork, defective exercise, interference with alimentation, etc.); a parietic state of the bladder and intestine from sedentary routine; deafness (not so much due to school-life as first recognized in connection with teaching); various contagious parasitic diseases, such as scabies, ring-worm and pediculosis; certain mimetic neurotic affections (hysteria, chorea and even epilepsy itself); the ordinary acute contagious febrile affections; the mild contagious lesion of the corners of the mouth which the French call *pourleche* (not described in American works); and syphilis, which is occasionally spread in the schools.

All the foregoing affections should be recognized in medical supervision of schools."—*Medical Review of Reviews*, Vol. VI., No. 7.

BOOK REVIEWS.

"A Manual of Obstetrical Technique as Applied to Private Practice." By Joseph Brown Cooke, M. D. Published by J. P. Lippincott Company, 624 Chestnut St., Philadelphia. 1900.

This little book seems to us as one of the most valuable that has come to our notice recently. The author presents all the details which he has learned from an extensive private and hospital practice. Most of us may feel that we can not carry them all out as he does. But it is nevertheless of great value to have the ideal set before us in simple style, and then attain as near to it as circumstances will allow. Hence, not merely to the young and inexperienced man is this book valuable, but it is full of suggestions to all except some few who have a very wide experience, and have kept fully abreast of modern obstetrics which considers every confinement in the light of a major surgical operation, so far as the details of asepsis are concerned.

"Food for the Sick and How to Prepare It." By Edwin Charles French, M. D. Published by John P. Morton and Company, Louisville, 1900.

Basing his advice and suggestions not alone on personal experience, but also on the statements of the best authorities, the writer here presents to the physician and nurse much valuable information. Nowadays much more attention is paid to foods than formerly, and we are still far from complete success in the diets adopted for various diseases. However, the doctor, at least, is often quite ignorant of the best ways to prepare the foods he desires given. In these 150 pages he will get all these exact details besides much of suggestion as to new or varied diet. Special chapters are devoted to enemata, peptonized foods and foods for the baby.

"Perfect food, perfectly cooked and perfectly eaten" is indeed a high ideal but a good one.

"Practical Uranalysis and Urinary Diagnosis." A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, LL. D., M. D., Queens University, Fellow of the Royal College of Physicians and Surgeons, Kingston, Canada; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys;" also of "Diabetes: Its Causes, Symptoms and Treatment." Fifth Revised and Enlarged Edition. With numerous illustrations, including Photo-engravings, Colored Plates and Tables for estimating total solids from Specific Gravity, Chlorides, Phosphates, Sulphates, Albumin, Reaction of Proteids, Sugar, etc., etc., in Urine. 6 x 9 inches. Pages xvi—406. Extra Cloth, \$3.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

This new edition is about thirty pages larger than the fourth edition. This last appeared only two years ago, and the demand for a new edition thus early indicates the large and increasing popularity of the book as well as the persistent scientific work of the author. We know of no book which equals it in completeness and practical usefulness.

This edition differs from the last mainly in the addition of a chapter on the microscope and its use in uranalysis, and of data which are the results of our five years' study of centrifugal analysis.

The subject of testing for albumin, which is the part most frequently under the consideration of the general practitioner, has been almost entirely rewritten.

Vivisection. Senate Document, No. 337, 56th Congress, First Session.

Our readers will recall that last winter we called your attention to the need of writing to your Senators and Congressmen, and remonstrating against the passage of a "bill for the further prevention of cruelty to animals in the District of Columbia." This volume gives the full account of the hearing held February 21, 1900, and is valuable to the physician because it presents

at considerable length all the pleas of the anti-vivisectionists and the replies which overwhelmed their bill. It is printed by the Government Printing Office in Washington, and may be procured through your Senator.

"Transactions of the Section of Gynecology of the College of Physicians of Philadelphia." Vol. V.

Not many medical societies with a membership of only thirty-two, can boast of so many distinguished names, such excellent papers and so neat and attractive a report. This last is doubtless due to the fact that the volume is a reprint of the papers which were first published by our contemporary, *The American Journal of Obstetrics*. The period covered extends from Dec. 15, 1898, to Dec. 21, 1899.

"Transactions of the Southern Surgical and Gynecological Association." Twelfth session, Dec. 5-7, 1899.

This attractive volume, uniform in appearance with those which have preceded it, presents in detail and with many accompanying illustrations and full discussion, the papers presented at New Orleans last December. Many of these have already met the eyes of our readers and have been a proof of the excellence of the whole programme. The foremost surgeons of the country are proud of the honor of addressing this association.

"Manual of the Diseases of the Skin." By L. Duncan Buckley, A. M., M. D. Fourth edition, revised and enlarged. Published by G. P. Putnam's Sons, New York.

We are glad to again call the attention of our readers to this manual. The author's more than national reputation, the analysis of twenty thousand cases, and the practical formulary are all features which aid materially in the large success which it has already attained.

Of course the descriptions are brief, but they are accurate, and hence immediately available. The prescriptions are tried

and tested and many alternatives are presented, thus allowing the practitioner ample opportunity for the use of his own judgment and for varied if long-continued treatment.

"Studies in the Psychology of Sex. The Evolution of Modesty. —The Phenomena of Sexual Periodicity.—Auto-Erotism." By Havelock Ellis. 6 3-8 x 8 7-8 inches. Pages xii-275. Extra Cloth, \$2.00, net. Sold only to physicians and lawyers. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

As indicated above this book is not intended for the reading of the general public. That it can be kept from them we do not, however, believe, and the wisdom of publishing such books is certainly open to question. In the hands of physicians, however, the book may be serviceable, and it is to such that we address ourselves. The author maintains by argument and incident, that modesty is related not to the amount of clothing, but to the habits of thought of the various races and tribes. It is everywhere present among adults. He claims that sexual desires, both of men and women, are periodic. Finally he takes rather extreme views in regard to auto-erotism or in plain English, masturbation. While it may be well for physicians to be disabused of the idea that all sorts of terrible diseases and troubles result from such practises,—and this idea is truly wide spread—yet the laity will not be helped by being allowed indulgence in self-abuse. Just what value the book will have to lawyers we do not see.

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ANNALS OF GYNECOLOGY AND PEDIATRY

A MONTHLY REVIEW OF GYNECOLOGY, OBSTETRICS,
ABDOMINAL SURGERY, AND THE DISEASES OF CHILDREN.

EDITED BY

ERNEST W. CUSHING, M.D., LL.D.,

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